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The OIL WEEKLY

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FOR OIL AND GAS PRODUCERS AND PIPE LINE MEN

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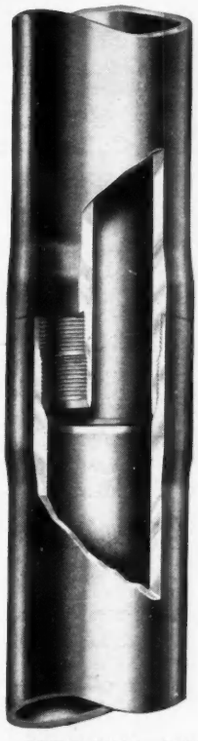

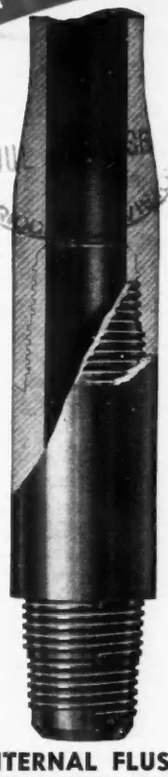

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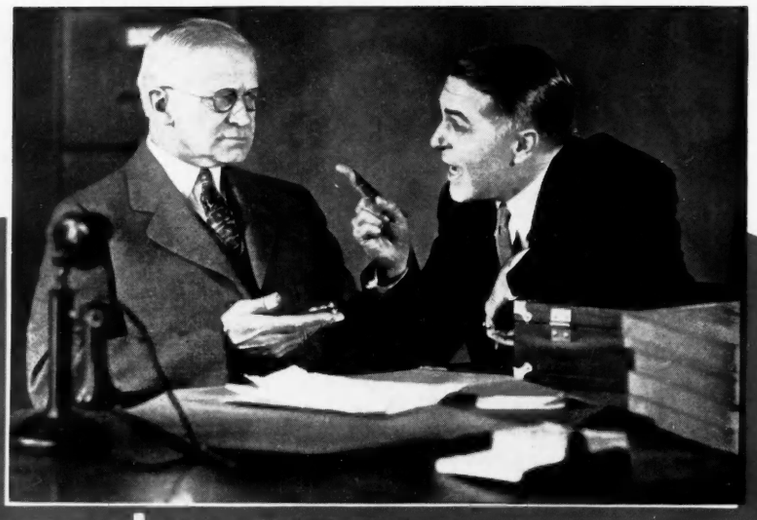

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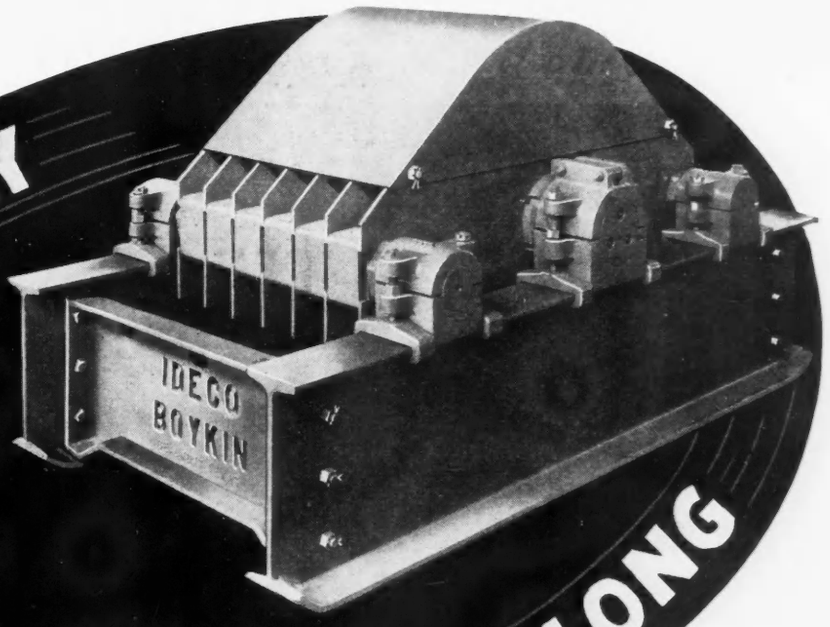
MERRILY THEY ROLL ALONG



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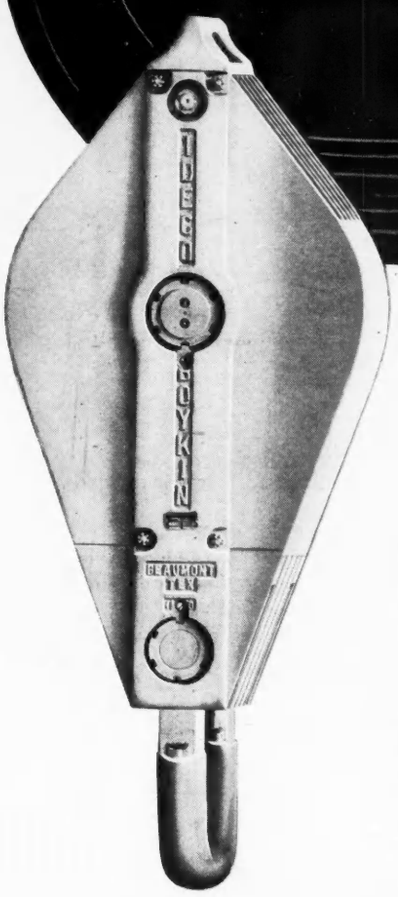

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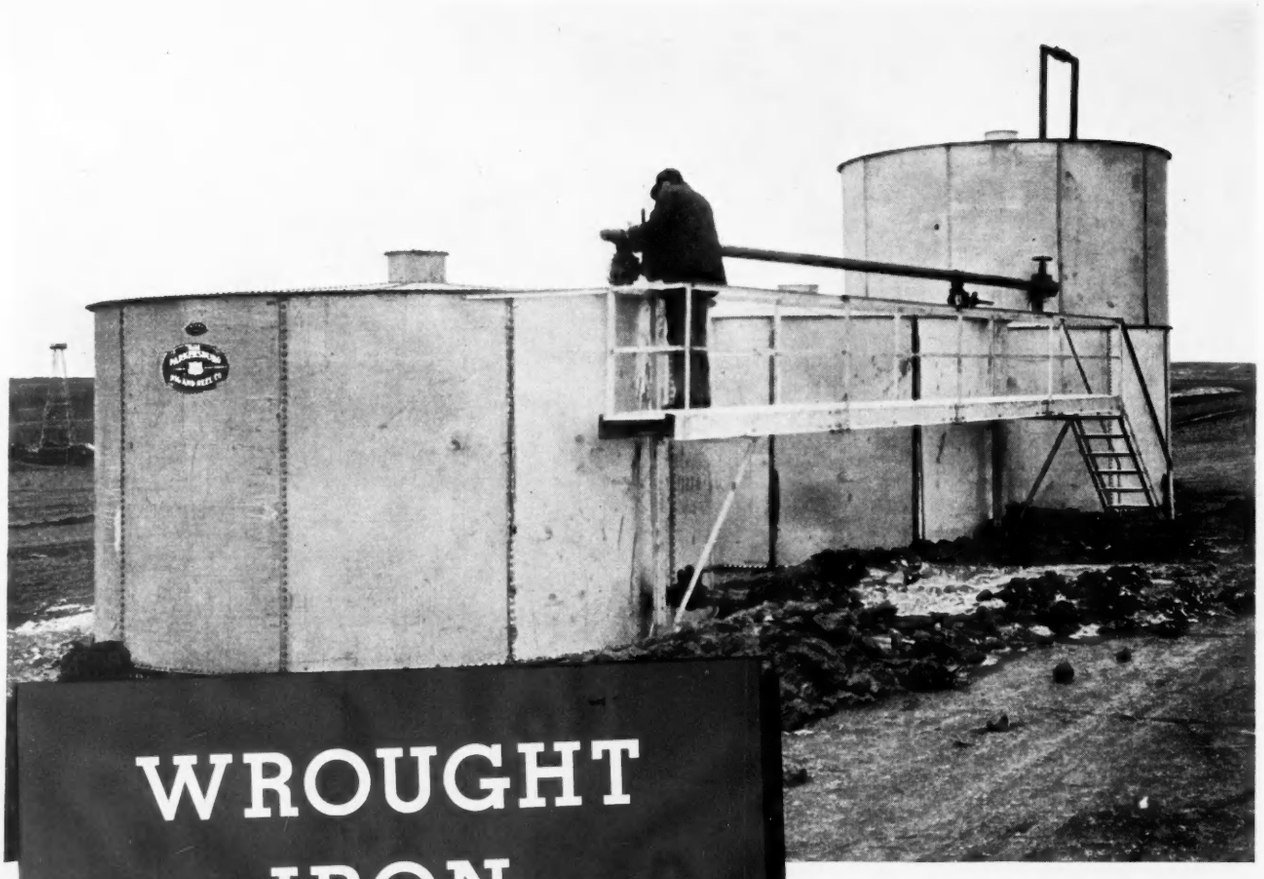

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PUBLISHED BY
THE GULF PUBLISHING COMPANY
HOUSTON, TEXAS

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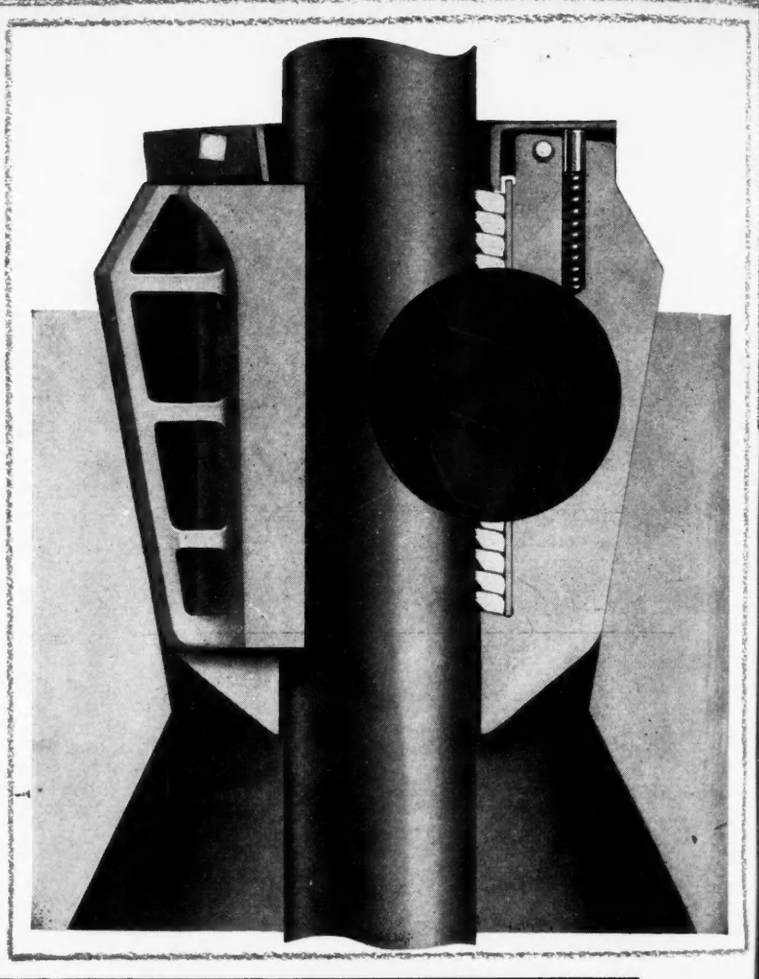
SPECIALIZED OIL JOURNALS
Published by
THE GULF PUBLISHING COMPANY

BRANCH OFFICES

NEW YORK.....250 Park Ave.
PITTSBURGH.....Standard Life Bldg.
CHICAGO.....332 S. Michigan Ave.
LOS ANGELES.....Haas Bldg.
TULSA.....Hunt Bldg.
FORT WORTH.....W. T. Waggoner Bldg.
WASHINGTON.....Albee Bldg.

Member Audit Bureau of Circulation
Member Associated Business Papers, Inc.

Published every Monday. Single Copies 15 cents. Subscription price: domestic and foreign, $2.00 a year; renewal subscriptions, one year $2.00, 2 years $3.00. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879. Supscription restricted to those engaged in the producing and pipe line branches of the oil industry or the manufacturing and distribution of oil field supplies. Advertising rates on application.



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THE OIL WEEKLY

FOR OIL AND GAS PRODUCERS
AND PIPE LINE MEN

ENGINEERING NEWS STATISTICS

WARREN L. BAKER, Editor.

. . . this Week

WHILE a Congressman from Pennsylvania is making a belated plea for more oil tariff for the salvation of the small producers in his state, a report is being filed by tariff investigators advising Congress of the big units in business. Obvious purpose of the latter is to put Congress in some position where it can arrange the tariff so it will not benefit the rich. What the government apparently would like is some kind of air conditioning that would temper the wind to the shorn lambs' comfort and at the same time make it uncomfortably warm for the sheep with wool. The fact that many of the weak wells that must be protected belong to operators making more than a million net a year, and the further fact that they prosper along with the smallest, makes legislation an involved procedure. **Page 9.**

PALEONTOLOGY had a long up-hill fight in the oil industry. That microscopic life of former geological ages could leave markers that could be a guide for any activity of this age seemed too romantic to the field forces even after they had accepted other sciences that came to their aid. Even the executives who authorized the expense of the laboratory stood in the position that if paleontology had anything to show, it could show it with the minimum of assistance from other departments. But paleontology has persisted to the end that it is recognized as a distinct aid that is becoming of increasing importance as drilling goes deeper. **Page 19.**

THE fact that cement will penetrate water-bearing sands much more readily and to greater depth than into oil-bearing formations has been of assistance in reconditioning wells in the Edwards lime area of Texas. The system is an outgrowth of the custom of plugging to shut off bottom-hole water. After the hole has been plugged back the cement is drilled and in some cases acid treated. In areas where large amounts of water intrude the system has a big bearing in lifting economy. **Page 24.**

A RIG water system that saved its first cost on the first well drilled should prove of interest to all parties who drill in places where water is scarce or foul. **Page 28.**

PROSPECT that a Vermilion Parish test will go to 13,000 feet puts South Louisiana in line for the world's deepest hole. Already a world record is being made in running 10,950 feet of 7-inch casing—the longest of any size that has been set. South Louisiana has a third of the 18 holes that have gone below 10,000 feet, and the speed with which the latest hole was put down and lack of trouble in drilling forecasts a continuation of this deep exploration.

The Oil Man's Calendar

JULY 31	Interstate Oil Compact Commission, Dallas, Texas.
AUG. 11–16	Michigan Oil and Gas Exposition, Mt. Pleasant, Michigan.
SEPT. 7–12	World Power (Fuel) Conference, Washington, D. C.
7–12	American Chemical Society, Pittsburgh, Pennsylvania.
16–18	National Petroleum Association, Atlantic City, New Jersey.
	American Petroleum Institute, Division of Production, Mid-Continent District, Probably at Oklahoma City.
OCT. 5–9	National Safety Congress Petroleum Section, Atlantic City, New Jersey.
	American Institute of Mining and Metallurgical Engineers Cleveland, Ohio.
NOV. 9–12	American Petroleum Institute, 17th Annual Meeting, Chicago, Illinois.
NOV. 30–DEC. 1	Independent Petroleum Association of America, Biltmore Hotel, Oklahoma City, Oklahoma.
NOV. 30–DEC. 4	American Society of Mechanical Engineers, Annual Meeting, Society's Building, New York.

IMPOSITION of chain store taxes on integrated majors operating retail outlets for petroleum products has driven the Standard Oil Company of New Jersey and Standard Oil Company (Indiana) to retire from retail marketing operations. Standard Oil Company of New Jersey and the Esso group announced July 14 they were transferring company operated service stations to dealer operation. Indiana's announcement came July 16, telling of rapid completion of the task of leasing out stations and cancellation of agents' agreements, and conversion of all outlets over which it had any control to the dealer basis of operation. **Page 13.**

"FOR weeks the party was crossing the endless chaos of this green hell. . . . The thick ceiling of vegetation would not allow a single ray of sunlight pass . . . The compass or the sun was the only guide, since men had never been in this part of the jungle . . . Progress was slowed down even more after one of the men had been bitten by a poisonous snake, and it was necessary to carry him, swollen and feverish, on our backs for days . . . Many of the rivers, some of which were quite important, did not figure on any of the existing maps." Those are extracts from Victor Oppenheim's article on some aspects on a geological exploration for oil in the upper Amazon country. **Page 44.**

LON SMITH apparently does not like the way things are conducted in the administration of oil affairs by the Texas Railroad Commission, of which he is a member. His complaint that allowables are set before the hearings indicates his disdain of matters of form—perhaps he would like the intimate details of individual field and well problems unfolded in the open hearing. That would mean the commission would be in continuous session and still far behind. From the expression of those attending the last hearing, all are out of step except Lon. **Page 8.**

Commission Discord

SMITH ATTACKS COLLEAGUES AT TEXAS HEARING SESSION

AUSTIN, TEXAS.

OPERATORS appearing at the statewide hearing Thursday were startled by an attack on the other commissioners which was contained in a prepared statement issued by Commissioner Lon Smith.

Smith has openly opposed Commission Chairman Ernest O. Thompson in his race for reelection for the commission, but this is the first time that the breach has been observed in an official hearing.

Operators sat silently while Smith read his statement, but as soon as it was completed several of them rose to the defense of the other commissioners and their established policies, declaring that their experience had shown that such statements were entirely unwarranted.

It seemed significant that while several operators rose to the defense of Thompson and Terrell not one man endorsed Smith's statement. When one individual asked for a rising vote of confidence in the commission, every man in the hall rose to his feet.

Most observers present at the hearing agreed that Smith's statement was issued for the purpose of embarrassing Thompson, and that its sole significance was political.

At the conclusion of the testimony on East Texas Smith rose to his feet:

"My position regarded the picture of East Texas in the oil industry has been known all along by those who attend our hearings and read the papers. As an official of this state, elected by the people, I deem it my duty to inform them of the true conditions existing in the oil industry in East Texas, and I desire to express myself here at this open hearing.

"First, let me point out that these so-called state-wide proration hearings are a monstrous farce. Even before you oil operators leave your homes to attend a hearing, the monthly allowables for the various oil pools of the state have already been scheduled.

"As you will recall, representatives from the East Texas field have appeared here time after time, month after month, seeking relief only to hear a lot of talk about bottom hole pressure, water intrusion, and other evasive arguments designed solely to restrict the production of oil in East Texas.

"In no sense of the word am I getting out of line with my duties and obligations to the tax payers of this state when I further refuse to sign proration orders that discriminate one oil field against another.

"Thousands of men are out of jobs in this state because of the extremely low allowable for East Texas oil wells. Many independent producers have lost their property, and many others are being forced to sell to the big companies or face bankruptcy because the per-well allowable in East Texas is so low that the small operator cannot conduct his business even at a small profit. If such a practice of discrimination is continued, the ultimate end will be the complete destruction of the independent oil industry—both refining and producing, at a cost of millions of dollars annually to the gasoline consuming public, who will pay higher and higher prices for gasoline and other petroleum products.

"Now, oil is being shipped from other states and other Texas pools into the world's largest oil field to East Texas refiners, who are unable to buy crude where its availability should be unquestioned. One East Texas independent refinery alone has a contract to purchase 5000 barrels of Louisiana crude oil daily — mind you, Louisiana oil that bears 11 cents tax a barrel, thereby enriching the treasury of that state when ours in sorely in need of funds.

"Land and royalty owners in East Texas are losing thousands of dollars every day to the benefit of people in other oil producing states and Wall Street.

"Aided by imports from foreign countries, other states are capturing Texas oil markets everywhere, and the Texas treasury has escaping from it several millions of dollars annually because of our low oil allowable, and our adherence to a "state oil compact," which is not being respected by other signatories.

"At a time when gasoline consumption is at its peak, East Texas has been forced to take a cut in allowable now for several months to the point that practically every well in the field is on a marginal basis, that is 20 barrels per day. Unless the people of this state rebel against present discriminatory allocations, I warn the independent operators of Texas that the next legislature will be called upon to deliver the knock-out punch by the enactment of a law setting the allowable for marginal wells at 10 barrels daily."

Thompson and Terrell sat silent througout the statement, nor did they make any attempt to answer the charges when Smith sat down, after suggesting that the allowable in East Texas for August be increased to 3 percent of the hourly potential of the field, or a raise of some 75,000 barrels per day.

After the hearing began Chairman Thompson announced postponment of discussion on the Rodessa field. This brought immediate protest from Charles I. Francis, attorney for United Gas System. Francis declared that unless the commission acted promptly the Rodessa field would be ruined and would seriously injure other fields in the state. He de-

East Texas and the Marginal Well Law

IN last week's OIL WEEKLY, in an article headed "East Texas Pumping Status" the statement was made that the Texas marginal well law does not permit prorating a well below 20 barrels daily.

While practice of the state's conservation authorities in the past has been not to prorate any well below the 20-barrel figure, many attorneys hold that under the law, a flowing well's prorated status is fixed by the effect of production on bottom hole pressure and other factors, and that, consequently, the Texas Railroad Commission can, if it wishes to do so, prorate East Texas flowing wells below 20 barrels a day. Many go further and say that in view of past testimony at commission hearings by commission engineers, the railroad commission must be committed to a policy of prorating East Texas flowing wells below 20 barrels.

They point out that heavy drops in pressure must begin coming quickly unless such continued prorating is done. Some are hopeful of a new proration order based on potential and acreage, which would stop drilling in East Texas and materially solve the problem.

Beyond reducing allowables the railroad commission has not officially recognized as yet the problem of dropping pressures and the marginal well limit of production in East Texas.

On the other hand, the political and practical side of cutting flowing wells in East Texas below the allowable of marginal pumping wells in the field is a formidable one. What will the operators say and do if flowing wells are cut below 20 barrels?

The Texas Railroad Commission is faced with the problem of less than 20 barrels per well in East Texas, or drastic cuts in other fields—and the decision is not far distant.

cared that in some areas of the Louisiana portion of the field, pressure had dropped as much as 700 pounds, and that the effect of this decline could be seen on the Texas side. He said that it was essential that the commission move immediately to provide wider spacing for wells, control of those wells producing gas alone, and effective control of oil wells producing with large volumes of gas.

Thompson pointed out that the commission had already provided for a total displacement factor which prevented any well from producing with more than 2000 feet of gas per barrel, or a total reservoir displacement daily equal to that of the well with the highest allowable which was producing with a gas-oil ratio not in excess of commission regulations.

He presented a list of the producing wells in the field which showed that there was one well drilled on a 3-acre tract, but that no other well was on a unit smaller than 20 acres.

Thompson pointed out further that the Texas Commission has done all in its power to obtain cooperation from Louisiana in the preparation of uniform rules to govern the entire field. He explained that invitations had been sent to Louisiana and that Dr. J. W. Shaw of the Louisiana Conservation Commission has wired his regrets and said that he hoped to meet with the commission at a later date.

Thompson promised that the hearing would be held within two weeks at some point near the field, and that Louisiana officials would again be invited to attend. Whether they accept the invitation or not the hearing will proceed, he said, and rules will be issued thereafter.

Attorneys for the larger companies then urged that the commission institute a temporary rule providing for wider spacing during the interim. Their request for 20-acre spacing brought a protest from Marion County citizens who were advocating a 10-acre rule.

After some discussion the latter group capitulated and agreed to accept the 20-acre rule during the interim.

V. E. Cottingham, director of production for the commission, stated that the East Texas pressure had declined 2.23 pounds during the month ending July 12. The average pressure for the field on that date was 1180.21 pounds, he said. The total allowable during the elapsed period was 12,963,504 barrels, an average of 432,116 barrels daily. From this Cottingham determined that the average decline in pressure had been .172 pounds per 1,000,000 barrels produced. He recommended that the August allowable remain at 432,000 barrels per day.

J. D. Wrather, operating a lease in the Van field, requested a higher allowable for his three wells, which he said had unusually large potentials.

Marathon Oil Company and The California Company urged the commission to rule jointly on the Yates pool. Dan Moody, representing the smaller land owners involved in this controversy, declared that his side wanted to file supplemental written arguments, and finally obtain the consent of the commission for two weeks additional time in which to prepare these briefs.

Conroe operators requested an increase in production and operators in the new Pettus field asked that the allowable there be raised from 900 barrels to 1400 barrels per day.

More Oil Needed

BUREAU RECOMMENDS HIKE OF 19,700 BARRELS PER DAY

WASHINGTON.

A FURTHER increase of 19,700 barrels in daily average crude production was recommended for August on July 17 by the United States Bureau of Mines, conditioned upon the withdrawal from storage next month of a total of 5,000,000 barrels of gasoline and 125,000 barrels of crude oil per day.

The daily average production of crude for the coming month is placed by the bureau at 2,936,900 barrels, against 2,917,200 barrels in July and 2,655,000 barrels in August, 1935. The increase, it is pointed out, reflecting the normal gain in gasoline consumption, is partially offset by the recommended increases in withdrawals from stock.

"During the last four weeks for which complete data are available (up to July 4), the production of crude oil is estimated at 3,015,000 barrels daily," the bureau commented in discussing the current situation. "Crude oil stocks have declined at about 134,000 barrels daily, indicating a demand of 3,149,000. The bureau's estimate of demand for that period was 2,930,000 barrels. A difference of 219,000 barrels. This difference is accounted for by the fact that yields were lower than had been estimated and the withdrawals of gasoline for storage were less than the bureau recommended."

Motor Fuel Demand Up

Domestic motor fuel demand for August is estimated as 46,850,000 barrels, a daily average of 1,511,000 barrels, or nine percent above the 42,836,000 barrels demand for August, 1935, and 379,000 barrels over the July, 1936, estimate. Since the August index of seasonal variation, which was formerly more than one percent above that for July, is now only slightly above it, the bureau explained, practically all of this gain is due to the upward trend in gasoline consumption.

Exports for the coming month are figured at 2,600,000 barrels, or 200,000 barrels over the estimate for this month, but 222,000 barrels less than actual shipments last August.

"Stocks of finished and unfinished gasoline on May 31 were 71,605,000 barrels." The report continued. "According to the American Petroleum Institute, stocks declined approximately 3,100,000 barrels during June compared with the bureau's recommendation of 4,010,000 barrels. This would indicate that there was approximately 68,505,000 barrels of motor fuel on hand June 30, or about 9,000,000 barrels more than the quantity on hand June 30, 1935. The month of August marks the peak of motor fuel demand, and from then on consumption should fall off sharply. This means that curtailment of operations will be necessary during the fall and winter months in order to adjust the gasoline output to the smaller consumption, and that August will be the best opportunity for the industry to take advantage of the heavy summer demand for reducing its excess stocks. In view of this, the recommended withdrawal for August has been set at 5,000,000 barrels, slightly higher than the July recommendation and 1,800,000 barrels more than the recommended withdrawal for August, 1935."

Motor benzol production and direct sales and losses of natural gasoline are reduced by the bureau from 900,000 barrels for this month to 860,000 barrels in August, which, with the other factors involved, indicates 43,590,000 barrels as the required production of finished and unfinished gasoline during the coming month, the recommended allocation being as follows: East Coast, 6,720,000 barrels; Appalachian, 1,720,000; Indiana-Illinois, 7,470,000; Oklahoma, 3,000,000; Kansas-Misssouri, 2,750,000; Texas (inland), 3,360,000; Texas Gulf, 8,940,000; Louisiana Gulf, 1,520,000; Arkansas-Louisiana (inland), 1,170,000; Rocky Mountain, 1,050,000; California, 5,890,000.

The estimate of the ratio of natural gasoline used by refiners to the total production of gasoline is six percent, Indicating 2,620,000 barrels of natural gasoline to be utilized at refineries and leaving 40,970,000 barrels to be made from crude oil. The estimated yield of cracked and straight run gasoline is placed at 44,815 percent, a decrease of 0.02 percent from this month, which percentage gives 91,420,000 barrels of crude oil required for runs to stills.

Runs to stills of foreign crude next month are placed at the July level of 3,000,000 barrels, exports are estimated at 4,400,000 barrels, and losses and consumption of crude as fuel at 2,100,000 barrels, both also at the July level.

The same suggestion made in the July recommendation applies equally for August, the bureau stated—that the operators take advantage of the heavy demand to reduce crude stocks. Consequently, provision has been made for the withdrawal of 125,000 barrels daily, compared with the 112,500 barrels recommended for this month.

The required new production for the coming month willl be 91,045,000 barrels, and recommendations for daily average output in the several states are as follows: (Figures in barrels):

Texas	1,154,700
Oklahoma	575,500
California	550,000
Louisiana	188,500
Kansas	166,500
New Mexico	70,100
Pennsylvania	46,300
Wyoming	38,600
Michigan	32,400
Arkansas	31,200
Kentucky	14,800
Montana	13,900
Illinois	12,600
New York	12,500
Ohio	11,300
West Virginia	10,900
Colorado	4,700
Indiana	2,400

1934 Net Income

TARIFF STUDY REVEALS MILLION DOLLAR EARNINGS

Washington, D. C.—Seventeen corporations in the oil industry had net income of $1,000,000 or more in 1934, it was reported to Congress this week by the United States Tariff Commission.

The commission's report was prepared in conformity with a senate resolution adopted April 27, directing an investigation to develop the names and addresses of manufacturing corporations in the United States having statutory net incomes in 1935 of $1,000,000 or more, producing commodities protected by the tariff.

Since the information to be secured is available only in the files of the Bureau of Internal Revenue, which is prohibited by law from disclosing figures pertaining to any individual corporation, the commission could not comply with this requirement and was forced to compile data for 1934 from available investors' manuals.

While the purpose of the resolution was to disclose the benefits secured by large American corporations under tariff protection, the commission in reporting pointed out that figures on statutory net income cannot be used as a basis for estimating tariff benefits or the economic effort of the tariff on the public.

"With respect to figures for net incomes," it was explained, "this seems obvious, as the amount of tariff benefit certainly cannot be said to turn entirely on the amount of profit or loss. It is thus rarely, if ever, possible, in the case of any corporation or group of corporations, to determine even approximately what part of the net income derived from the sale of protected goods may be attributed to the tariff.

"Furthermore, with respect to the net value of sales, it should be noted that in no case may they be used in conjunction with the tariff rates as a basis for computing tariff benefits. This would be true even if, as is rarely the case, all the goods covered by the figures for net sales were dutiable at the same rate. Duties vary from being entirely ineffective to being entirely effective in increasing domestic prices by the extent of the duty, and the degree of effectiveness will vary at different times and for different grades of a given commodity. Even gross tariff benefits, on the asumption that duties are fully effective, could not be computed from sales and rates of duty, because allowance would have to be made for the effect of duties on materials entering into the finished products."

The only information which the commission is able to give, because of the restrictions against publicity surrounding reports of individual corporations to either the Bureau of Internal Revenue or the Census Bureau, was that 1934 net sales of the petroleum refining industry (including the income of the same companies from production, transportation and marketing) were $449,442,656 and statutory net income was $30,304,977, and, from investors' manuals, a list of companies having a net income in 1934 of $1,000,000 or more, which, it is pointed out, does not include companies which may be entirely engaged in activities other than refining nor companies which might have had larger gross sales but an income of less than $1,000,000.

The list shows that Standard Oil Company of California in 1934 had a net income of $18,347,807; Standard Oil Company (Indiana), $18,949,680; Union Oil Company of California, $2,902,733 (with sales of $57,368,455); Hickok Oil Corporation, Toledo, Ohio, $1,164,645 (sales, $11,131,862); Standard Oil Company of Kentucky, $2,599,466; Continental Oil Company, $4,865,358; Seaboard Oil Company of Delaware, $1,375,590; Phillips Petroleum Company, $5,757,309; The Atlantic Refining Company, $5,512,105; Tide Water Associated Oil Company, $4,811,637 (sales, $95,666,725); The Texas Corporation, $5,545,205; Plymouth Oil Company, $1,006,326 (sales $3,612,852); Amerada Corporation, $1,736,420; Gulf Oil Corporation of Pennsylvania, $2,811,183; Standard Oil Company of New Jersey, $45,618,960; Socony-Vacuum Oil Company, $24,121,297; and Sun Oil Company, $6,650,464. United Carbon Company, which produces gasoline along with carbon black and other chemicals, had sales of $5,631,613 and net income of $1,452,939, and General Motors Corporation, which produces processed motor fuel as well as automobiles, electric refrigerators an dother products, had sales of $843,807,849 and net income of $94,769,131.

Favors Disney Bill

PENNSYLVANIA HAS POST-SESSION SAY IN RECORD

WASHINGTON, D. C.

ENACTMENT of the Disney oil bill, doubling the present excise taxes on foreign oil and its derivatives and placing restrictions upon imports, is essential to the continued operation of the Pennsylvania industry, according to Representative D. J. Driscoll of Pennsylvania.

Expressing his views in the final post-session issue of the Congressional Record, Driscoll pointed out that the 80,000 wells in his state have suffered severely from import competition and the livelihood of the 30,000 persons employed in Pennsylvania production and refining has been menaced.

"Here is the trouble our independent oil producers must face," he said. "The large producers control four branches of the oil industry. They control production in the world's great fields, transportation through pipe lines, refining, and marketing through the world's financial centers. We have the production, and we have the refining, but we do not have the transportation or the marketing in our field. A larger company interested heavily in foreign oil fields and in transportation may lose on production and yet make money in transportation through its pipe lines, and so control the market that at the end of the year it has a profit, and by manipulating the part of the business in which the independents cannot successfully compete they may entirely wipe out the independents."

Charging that the consumers of fuel oil have not benefited from the exemption from tax now given bunker oil, Driscoll charged that "these giant importers of bunker oil are not subjected to the taxes which are carried today by every branch of the petroleum industry. They make no contribution whatever to the expenses of government, although they enjoy our market and take an undue proportion of the business, leaving on the domestic producer the burden of local, state and federal taxes."

The Disney bill, he asserted, "would enable the domestic petroleum industry to employ an increased number of workers whose pay is much higher than the average rate paid in many other industries. It would enlarge the consuming power of the oil-producing regions and we could thus continue to be important and more profitable customers of the industrial and manufacturing communities of our own and other states."

OHIO GETS A. P. I.

1937 production session to be at Columbus

New York.—The 1937 meeting of the Eastern District of the American Petroleum Institute's Division of Production will be held June 3 and 4 in the Deshler-Wallick Hotel at Columbus, Ohio, it has been announced by Chairman J. C. Askam of The Ohio Oil Company, Findlay, Ohio. The 1936 meeting, at which Chairman Askam and other officers were elected, was held at Pittsburgh.

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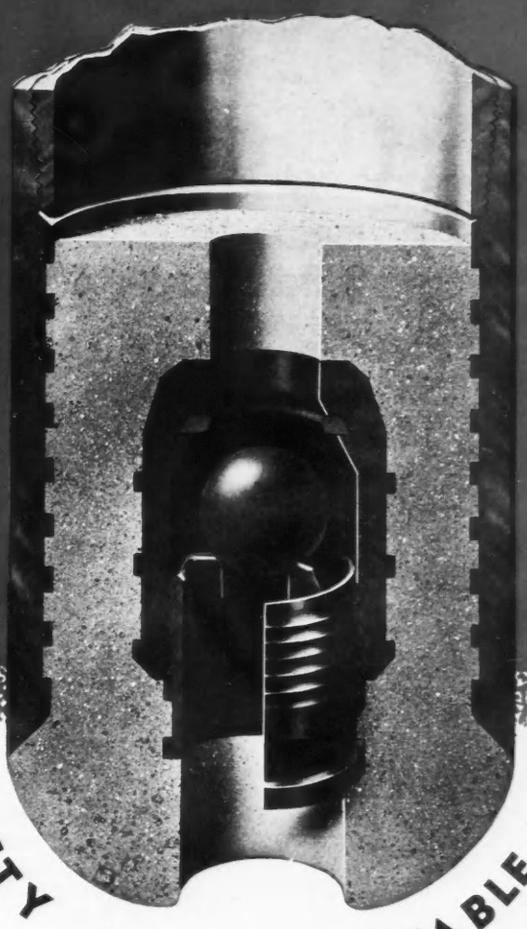

1

Note how strong Baker-Formula Concrete is securely anchored in the forged steel shoe — a shoe that IS a shoe — and how the arched design of the bakelite valve assembly provides maximum strength. Tests prove that the strength of a "floating" unit of Baker Cement Equipment is greater than the collapsing strength of the casing upon which it is run.

2

Examine the ample, properly proportioned passageways through the valve assembly—large enough to permit free circulation of cement, but not too large to secure a "wash down" action. The Bakelite ball which floats in rotary mud or cement slurry and at the slightest reversal of pressure instantly seats against the recessed rubber ring (backed by bakelite and concrete) and provides a leakproof double-seal against either low or high pressure.

Examine the illustration above and stop to consider the importance of Guiding, Floating and Cementing your casing, regardless of size or length of the string. You will then appreciate the correct design and materials used for all "floating" units of Baker Cement Equipment and realize their value to you.

3

The concrete is easily drilled up—and see how the bakelite valve assembly is set vertically to present a small cross section to the bit. Here is COMPLETE Drillability—with minimum bit expense and a hole absolutely free from metal or other dangerous and objectionable fragments which often prevent coring immediately below the shoe, and sometimes deflect the bit to start a crooked hole.

See your 1936 Composite Catalog for complete descriptions of many successful types of Baker Cement Equipment to meet your every need!

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Well Depths Greater

DEEPER DRILLING CONTINUES DURING FIRST HALF OF 1936

By L. J. LOGAN, Associate Editor

THIS year has brought a continuation of the trend toward deeper drilling. Wells completed in the United States in the first half of 1936 had a greater average depth than those completed in 1935. Those in 1935, in turn, had been deeper, on the average, than the completions of 1934. Gradually, but surely, the national average drilling depth is being increased.

Furthermore, this trend is likely to continue indefinitely, as shallower new fields are increasingly difficult to find. For the wildcatters, the pastures are greener where wells must be drilled deeper.

The tendency to drill deeper is not confined to any particular districts. It is general throughout most of the United States. The average depths of wells are being increased in nearly all the active states.

Drilling Depths in the United States 1925-1936

YEAR	Wells Completed	Footage Drilled	Average Depth Per Well
1925	25,406	73,677,400	2900
1926	28,995	81,186,000	2800
1927	22,301	66,903,000	3000
1928	19,964	59,892,000	3000
1929	23,463	67,925,285	2895
1930	19,848	57,557,200	2900
1931	11,716	34,259,110	2924
1932	14,290	43,033,422	3011
1933	11,700	36,270,000	3100
1934	17,508	49,803,556	2845
1935	20,751	61,523,100	2965
1936 (6 Months)	11,612	34,848,144	3001

Deeper Drilling General

The outstanding increase of average drilling depth for this year has been in North Louisiana, due to the influence of the deep Rodessa oil field. But this year has brought deeper drilling also for Arkansas, California, Kansas, Oklahoma, the Rocky Mountain States, North Texas, the Texas Gulf Coast, the Texas Panhandle, West Central Texas, and East and East Central Texas.

The Louisiana Gulf Coast has had slightly shallower wells in 1936 than in 1935, but the completions in that district still stand out conspicuously as the deepest in the United States, on the average. (With both the northern and southern sections of the state furnishing deep wells, Louisiana continues to be distinguished as the state having the greatest average drilling depth.)

Other states and districts where average depths have been somewhat less this year than last year include Michigan, the Southeastern or Eastern Gulf States, South Texas, and West Texas.

Still Deeper Wells Likely

Although drilling depths have been comparatively great this year, it seems likely that even deeper drilling, on the average, will occur in the future. The more promising regions already have been tested to a considerable extent for shallower production, and in such areas the princpial hopes left are for deeper production. Geophysical surveys, pointing out deep structures, are encouraging such deeper drilling, moreover; and the greater depths are becoming more easily attainable because of improvements in drilling equipment and methods.

The greatest depth yet reached in oil well drilling was 12,786 feet, or nearly 2½ miles, when a West Texas test went down to that level. But more than a dozen other wells also have gone below 10,000 feet. There are several fields that are producing regularly from below 9000 feet. Recent years have brought numerous new fields from 6000 to 9000 feet deep. In certain areas, particularly the Louisiana-Texas Gulf Coast, production from 10,000 to 15,000 feet is envisioned for the not distant future.

This Year Brings Increase

In the first half of 1936 the average depth reached in drilling in the United States was 3001 feet. That compares with averages of 2965 feet in 1935 and 2845 feet in 1934. The average of 3001 feet per well this year is based on records showing that in the first 6 months of the year, 11,612 wells were completed, their depths aggregating 34,848,144 feet.

This year's average drilling depth of 3001 feet is not far short of the all-time record for the industry, the figure having been exceeded previously only in 2 recent unusual years, when several relatively deep fields were distorting the national drilling picture. In 1932 the wells drilled in the United States averaged 3011 feet, and in 1933 they averaged 3100 feet, the all-time record. This year's average, so far, lacks less than 100 feet of equaling that all-time record, and there is a possibility that for all of 1936 there will be a considerably nearer approach to the record.

East Texas Influence Seen

The extraordinary average depths of 1932 and 1933 clearly reflect the influence of the East Texas field, where wells have averaged around 3650 feet, or considerably more than the national averages. Having furnished remarkably high proportions of all United States drilling in those years, East Texas consequently was largely responsible for the unusually great drilling depths for the country as a whole. In 1932 East Texas furnished 5840 of the country's completions, or 41 percent of the total, causing the national average depth to reach what was then a new record of 3011 feet per well. In 1933 East Texas supplied 2496 out of 11,700 wells, or 21 percent of the national total. While East Texas therefore exerted less influence in 1933 than in the previous year, there was a compensating heavy development of the Conroe field, where more than 600 wells were drilled to around 5100 feet. Consequently, the national average drilling depth again increased, setting the present all-time record of 3100 feet.

Even as early as 1931, East Texas had caused an increase of the national average drilling depth. The East Texas influence continued through the record-

Wells and Footage Drilled in First Half of 1936

State or District	Wells Drilled in First Half 1936	Feet Drilled in First Half 1936	Average Depth Per Well
Arkansas	43	127,929	2975
California	559	2,432,097	4351
Colorado	6	21,752	3625
Eastern States	1554	2,798,171	1801
Illinois	4	7,348	1837
Indiana	121	106,541	880
Kentucky	125	94,350	754
Ohio	951	1,822,510	1916
West Virginia	353	767,422	2174
Kansas	761	2,345,864	3083
Louisiana	515	2,594,545	5038
North Louisiana	291	1,311,679	4507
South Louisiana	224	1,282,866	5727
Michigan	374	956,800	2558
Montana	62	162,972	2629
New Mexico	268	1,003,619	3745
Oklahoma	1389	4,165,929	2999
Southeastern States	7	23,546	3364
Alabama	2	7,470	3735
Florida	1	2,625	2625
Mississippi	4	13,451	3363
Texas	6046	18,130,321	2999
East Texas	1445	5,262,932	3642
East Central Texas	174	637,950	3666
North Texas	1062	1,360,699	1281
South Texas	1572	4,820,339	3066
Texas Gulf Coast	554	2,912,801	5258
Texas Panhandle	331	981,052	2964
West Texas	656	1,755,670	2676
West Central Texas	252	398,878	1583
Wyoming	28	84,599	3021
United States	11,612	34,848,144	3001

setting years of 1932 and 1933, but it began to wane perceptibly in 1934, with the Conroe drilling no longer helping to swell the national average. In the first half of 1936 East Texas occupied a much less dominant position than formerly in the national drilling picture, having furnished only about 12 percent of the well completions of the United States. An accompanying table shows how the East Texas field helped to push the national average drilling depth to the record levels, and how the average then dropped off, only to begin increasing again, even in the absence of the East Texas influence. The table reflects the fact that even with East Texas drilling declining sharply, drilling depths for the nation today are relatively great, with a trend toward even greater depths in progress.

Gulf Coast Drilling Deepest

In the first half of 1936, as in 1935 and 1934, the Gulf Coast region of Louisiana stood out as the country's foremost deep drilling country, while the Texas Gulf Coast again held second place. California was nosed out of third place, however, by North Louisiana, where the district's average depth was increased sharply by the numerous new 6000-foot wells at Rodessa. The average well depths in 1936 in those four leading deep drilling districts were as follows: 5727 feet in coastal Louisiana, 5258 feet in coastal Texas, 4507 feet in North Louisiana, and 4351 feet in California. For Louisiana as a whole, the average depth was 5038 feet, the record among the states. Outside of these four districts, no other state or section had an average drilling depth as much as 3800 feet, although the averages were generally higher this year than in previous years. An accompanying table shows the average drilling depths in the various states and districts in 1934 and 1935 as well as in the first half of 1936.

Average Drilling Depths in 1934, 1935, and 1936 by States and Districts

(Determined from The Oil Weekly's records on depths of completed wells.)

State or District	Average Depth In 1934	Average Depth In 1935	Average Depth First Half 1936
Arkansas	2985	2864	2975
California	4608	4164	4351
Eastern States	1669	1726	1801
Illinois	....	....	1837
Indiana	....	....	880
Kentucky	....	....	754
Ohio	....	....	1916
West Virginia	....	....	2174
Kansas	2981	3078	3083
Louisiana	3537	4398	5038
North Louisiana	2242	2649	4507
South Louisiana	4849	5764	5727
Michigan	2947	2679	2558
Oklahoma	2678	2879	2999
Rocky Mountain States	2682	3040	3497
Colorado	....	....	3625
Montana	....	....	2629
New Mexico	....	....	3745
Wyoming	....	....	3021
Southeastern States	3642	3737	3364
Alabama	....	....	3735
Florida	....	....	2625
Mississippi	....	....	3363
Texas	2956	3041	2999
*East Texas	3664	3642	3642
*East Central Texas			3666
North Texas	1228	1233	1281
South Texas	2734	3136	3066
Texas Gulf Coast	4692	4754	5258
Texas Panhandle	2851	2947	2964
West Texas	2706	2827	2676
West Central Texas	1365	1487	1583
United States	2845	2965	3001

*East Texas and East Central Texas included together in 1934 and 1935.

SHELL BUILDS TANKS

Houston.—Shell Petroleum Corporation is erecting 10 new 118,000-barrel steel storage tanks at its refinery on the Houston Ship Channel. Tanks will be used for impounding crude and refined products. This tank order is one of the largest single purchases made in the southwest in recent years.

QUIT RETAILING

Indiana and Jersey will post only bulk prices

CHICAGO.

IMPOSITION of chain store taxes has been given as the cause of action taken last week by Standard Oil Company of New Jersey, the Esso marketing group, and Standard Oil Company (Indiana) to withdraw from retail market outlet operation.

Both organizations are rapidly completing the task of leasing out company operated stations, cancelling authorized agents' agreements, and converting all outlets over which they had any control to the dealer basis of operation.

Standard Oil Company of New Jersey's move will place 2500 outlets in the hands of dealers and remove Esso marketers from the retail business. Standard Oil Company's (Indiana) statement did not mention the number of outlets that would change hands.

Standard Oil Company of New Jersey gave two reasons for the move: (1) a desire to leave the retail field entirely to the independent dealers, and (2) the difficulty of continuing profitable operations under the many kinds of taxes to be paid, including chain store taxes which are now in effect in some of the states where the company operates and which probably will be adopted by other states.

As soon as the change is completed, retail prices will be posted by individual dealers and the companies will take no hand in determining prices at which the dealers will sell. While the changes are being completed, the companies are, necessarily, posting both dealer prices and service station prices.

Once the dealer becomes his own price poster, it is expected he will base his station price upon the tank wagon price plus the margin he needs to carry on his business.

BIG TANKER ORDER

New York.—Standard Oil Company of New Jersey revealed last week that it has contracted for immediate construction of eight oil tankers. Combined cost of the ships was estimated at about $13,000,000. This ship building order was described as the largest ever given by a private concern in the United States, and it was generally regarded as a manifestation of confidence in the future of the nation and of the oil industry.

FINISH 57-MILE LOOP

Philadelphia.—Keystone Pipe Line Company, transportation subsidiary of Atlantic Refining Company, has completed the construction of a 57-mile eight-inch loop on its Philadelphia-Pittsburgh gasoline trunk line system. The loop was built between Montello and Mechanicsburg, and parallel to a six-inch unit that has been in service since December, 1931.

How the East Texas Field Has Influenced the Nation's Average Drilling Depths

(East Texas wells are somewhat deeper than the national average being around 3650 feet deep; and they increased the national average in 1931, 1932, and 1933. But drilling has been declining in that field in 1934, 1935, and 1936, and still the national average depths have continued comparatively great. This shows that irrespective of East Texas, the trend is toward deeper drilling.)

YEAR	Total U. S. Completions	East Texas Completions	Percent of U.S. Completions in East Texas	National Average Drilling Depth
1929	.....	....	..	2895
1930	.....	....	..	2900
1931	11,716	3,600	31	2924
1932	14,290	5,840	41	3011
1933	11,700	2,496	21	3100
1934	17,508	3,762	22	2845
1935	20,751	4,124	20	2965
1936 (6 Months)	11,612	1,445	12	3001
Total for period	87,577	21,267	24	....

MEN IN THE INDUSTRY'S NEWS

NORTHROP CLARY, public relations director of Standard Oil Company of New Jersey, has been appointed assistant to the president of that organization. Clary will continue handling public relations for Standard Oil Company of New Jersey.

GOVERNOR E. W. MARLAND of Oklahoma, Tom Anglin, Oklahoma representative on the Interstate Oil Compact Board, Art Walker, secretary, W. J. Holloway, attorney, and Reford Bond, A. S. Shaw and J. C. Walton, Oklahoma Corporation Commissioners are to attend the Dallas meeting of the Interstate Oil Compact Conference scheduled for July 31. Formed for the purpose of keeping oil production and marketing laws uniform in the interested states, the compact is to be discontinued in 1937 unless a bill to be introduced at the Dallas meeting, extending the life of the compact another two years is favorably considered.

C. O. RISON, district superintendent for Indian Territory Illuminating Oil Company, has been transferred to eastern Colorado to handle the company's wildcat tests in that area.

W. A. JONES, production foreman for Carter Oil Company at South Burbank, has been transferred to Oklahoma City.

VIRGIL HICKS, engineer for E. H. Moore, Inc., has resigned.

MIKE T. HALBOUTY, geologist and petroleum engineer for Glenn H. McCarthy, Incorporated, had an acute attack of appendicities last week and is in the hospital at Beaumont, Texas.

J. K. DAVIS, JR., recently disposed of his interest in Southwest Drilling Company, San Antonio, to J. W. Cosner, C. A. Peacock, E. H. Keator and others. Davis is now located at 1038 Milam Building, San Antonio.

CECIL A. HAMMOND, a graduate of Purdue University and a former student of the University of Tulsa, is a new member of the engineering department of Marathon Oil Company, Tulsa.

J. E. FLANAGAN, superintendent of the land department of the Oklahoma, Kansas and Kentucky Division of The Texas Company, is vacationing on the Pacific Coast.

ED SHAKELY is now in charge of Shell Petroleum Corporation's land office at Great Bend, Kansas, covering the western part of the state.

T. W. CROSBY, with 15 years experience in the Mid-Continent area as district representative for sales for Graver Tank & Manufacturing Company, is now with the sales division of Wheatly Brothers Pump & Valve Manufacturing Company, located at Tulsa.

T. G. PRICE HAS BUILT ENVIABLE RECORD AS PETROLEUM INDUSTRY AUTOMOTIVE SUPERINTENDENT

»

HEADS ALL PRODUCTION AND PIPE LINE TRANSPORT ACTIVITIES OF SHELL

»

—Blank & Stoller

T. G. PRICE

DISCUSS efficient automotive transportation and you have the attention of T. G. Price; mention something Price is doing and you interest practically any automotive man in the petroleum industry. As transportation and automotive superintendent for Shell Petroleum Corporation and Shell Pipe Line Company, he is in charge of a large fleet of motorized vehicles. His department has a record of over 8,000,000 passenger car miles per year at a .04 cent cost per mile, while its truck fleet travels over 5,000,000-ton miles with a .05 ton mile cost.

In 1918, when 24 years of age, he obtained his first job in the oil business. It was as an automobile mechanic for Roxana Petroleum Company, which later was to become Shell Petroleum Corporation. Subsequently, he advanced through various positions in the transportation department of the company. By 1922, Price was a garage foreman. One year later he became assistant automotive superintendent. In September, 1931, he was promoted to transportation and automotive superintendent for Shell Petroleum Corporation and Shell Pipe Line Company, which position places him in charge of all production and pipe line passenger cars and trucks of the company. His present home is Houston. Price is a member of the Society of Automotive Engineers, and has taken an active part in various petroleum transport societies.

R. P. PADEN, electrical supervisor for Atlantic Pipe Line Company, Dallas, has been appointed general superintendent, according to an announcement by J. Harry Wood, vice-president and general manager, who occupied the former position prior to being elected an officer of the company last November. W. S. Schmidt, Dallas, has been appointed assistant general superintendent. Offical title of department heads has been changed as follows: J. W. Williams, chief engineer, and C. M. Southern, assistant chief engineer, Dallas; L. S. Mobley, supervisor of terminals, Port Arthur; D. M. Blackstock, division superintendent for Southwest Texas, Refugio; and J. L. McGrew, division superintendent for West Texas and New Mexico, Midland.

T. G. B. DAVIES, Attock Oil Company, Khaur, Punjab, has returned to Burma from a visit to England.

DR. J. A. L. HENDERSON, New Brunswick Gas and Oilfields, Limited, London, recently left England to visit Canada and the United States.

F. G. RAPPOPORT, British Controlled Oilfields, Ltd., London, recently returned home from a visit to his company's holdings in Venezuela.

L. H. PORTER, general manager of New England Oil Company of Mexico, a subsidiary of Magnolia Petroleum Company, and Harry Gilligan, oil field contractor, both of Tampico, Mexico, were seriously injured July 8 enroute to Panuco, state of Veracruz, when the railway speeder on which they were traveling was derailed. Porter sustained severe injuries to both legs, while Gilligan had internal injuries and scalp wounds. Both are making satisfactory progress toward recovery.

CHARLES F. McCAULEY, formerly manager of Mexican Atlas Petroleum Company and Compania Petrolera del "Agwi" S.A. and now an independent operator, was severely injured in Tampico, Mexico, on July 3 as a result of being struck by an automobile. After several days in a hospital, he was removed to his home, where he is steadily improving.

GEORGE HILL, JR., president of Houston Oil Company and a vice president of the American Petroleum Institute, was the guest of honor July 10 at a luncheon given by members of the institute in Mexico City and representatives of the various oil companies. Mr. Hill went to Mexico City as a guest of the government in connection with the

"BANK ON INTERNATIONAL"

SOUND ADVICE FROM THE USER

International Model C-55-F dual-drive six-wheel truck owned by T. E. Collins, Shreveport, La., ready to haul this drawworks to location. International Trucks range in size from the Half-Ton unit to these powerful Six-Wheelers.

Here is an International rigid-frame Model TA-40 TracTracTor on a pipe-line job. The International line of industrial tractors includes crawlers and wheel tractors, with gasoline and Diesel engines.

YOUR most reliable guide when you buy motor trucks, industrial tractors, or power units is the opinion of users as to *International against the field.*

International has not only built trucks and tractors for over 35 years; it has built REPUTATION for quality products that oil men *know* can be counted on to deliver economy spread over the years. The longer you look into what it takes to make low-cost performance, the more you will be pleased with International.

Vast numbers of successful installations of International Trucks, Tractors, and Power Units throughout the industry are your guarantee that this Company will give you the soundest, most profitable answer to your own hauling and power problems. Cash in on International Harvester *experience,* and on the protection afforded this equipment by International Harvester *service.*

Call on the nearest Company-owned branch, or International dealer, for information. Catalogs sent on request.

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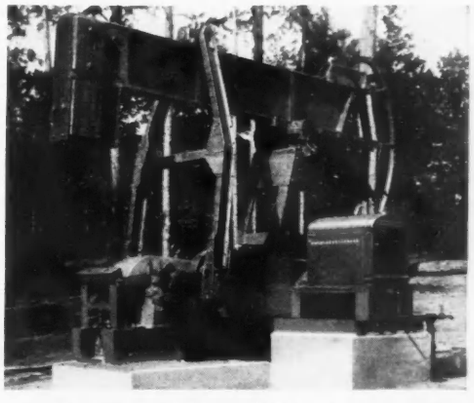


An International Power Unit, using natural gas as fuel, pumping on the Lulu May Baker lease at Johntown, Texas. International Power Units range from 12 to over 100 h.p., and there are engines from 1½ to 5 h.p. for light-duty service.

INTERNATIONAL HARVESTER

official opening of the Mexico-Laredo highway.

Other guests at the luncheon included Ing. Jose Baez, chief of the petroleum bureau of the ministry of national economy; Ing. Jose Colomo, assistant chief of that bureau; Ings. Manuel J. Zevada and Salvador Medina of the Petromex Company; Ing. Monges Lopez, Lic. A. Perez, Messrs. A. E. Banks, C. A. Young, L. L. Anderson, W. E. McMahon, I. D. Davidson, S. C. Mack, H. N. Branch, W. C. Hulme, W. S. McCormack, G. A. Steele, A. J. Armstrong, Palmer Beckwith, B. T. W. van Hasselt and R. Cabanas.

JOHN M. COURTNEY, field superintendent for Magnolia Petroleum Company in the El Dorado, Arkansas, district, has been transferred to Rodessa, Louisiana, to take charge of new district created last week following consummation of the company's purchase of R. W. Norton's Rodessa field holdings. Courtney has spent considerable time within the past six weeks in the Rodessa field studying and observing conditions and operating practices. He has been succeeded at El Dorado by R. A. Miller, who has been production foreman in the Gladewater section of the East Texas oil field.

E. L. SMITH, president of E. L. Smith Oil Company, Mexia, and family departed recently for Colorado Springs, Colorado, where they will remain for the balance of the summer.

VERNON L. KING, Los Angeles, geologist for several independent oil companies in California, has spent the past several weeks in Southwest Texas territory making a field study.

S. MASTON NIXON, assistant to the president of Southern Minerals Corporation, has returned to Corpus Christi from a trip to New York, Philadelphia and other points in the East.

RANCHO OIL COMPANY has moved from the Milam Building, San Antonio, to Dallas.

WILLIAM KUNSTADTER, connected with The Texas Company in New York for a number of years, will be located in the Chrysler building after August 1 where he will serve as secretary and treasurer of the recently formed California Texas Oil Company, Limited, the organization which will handle Far East marketing for The Texas Corporation and Standard Oil Company of California.

E. B. CLARK, managing director of Moose Oils, Limited, Vancouver, British Columbia, recently visited Calgary and other places in Alberta.

J. R. McWILLIAMS, who handled proration matters for Carter Oil Company in Oklahoma, recently was appointed head of the production department of Standard Oil Company of Louisiana, headquartered in Baton Rouge.

RICHARD SCHWEERS is a recent addition to the geological staff of The Texas Company at Midland, Texas.

FRANK P. ANDERSON, Wichita, Kansas, geologist, recently returned from a professional trip to Sioux Lookout, Ontario.

THOMAS W. PALMER, New York, legal department of Standard Oil Company of New Jersey, recently was decorated by the Brazilian government with the National Order of the Southern Cross in recognition of furthering a better understanding between North and South America.

W. C. JOSEY, president of Rancho Oil Company, Dallas, accompanied by Mrs. Josey and a daughter, is vacationing in Europe.

JULIAN FOSTER, Dallas, recently was appointed general superintendent of Lone Star Gas Company. He was formerly chief engineer for the company.

VAN D. BENNETT, Tulsa, assistant to general production superintendent, British American Oil Company, recently visited company properties in Montana.

EUGENE HOLMAN, New York, president of Creole and Lago Petroleum Companies, has returned to New York following a visit to the Gulf Coast.

J. S. YOUNG, production office employe of the Amerada Petroleum Corporation, Fort Worth, departed last week on a vacation trip to Southeastern New Mexico.

J. W. CRAM, scout for Continental Oil Company in the Texas Panhandle, has been transferred from Amarillo to Wichita, Kansas, where he will be assigned to land and lease work.

R. O. LaNEVE of Fort Worth, owner of producing and refining properties in Gladewater section of the East Texas field, is confined in a Dallas hospital with serious head injuries received July 18 in an auto mishap near Mesquite, Texas.

E. S. WALNE, assistant general superintendent in charge of drilling, production and pipe lines for Cia. Mexicana de Petroleo "El Aguila," S. A., at Tampico, Mexico, has resigned to become general manager of the Bettis Sales Company at Houston, Texas. Walne has been connected with the Aguila since 1920. Up until 1929, he was local purchasing agent, and was then promoted to the position he is now leaving.

WILLIAM R. MITCHELL, 45, assistant manager of the crude oil purchasing department of Magnolia Petroleum Company, died July 12 at a Dallas hospital after being ill several weeks. He had been in the services of the company since 1914, except for time spent with the Thirty-Sixth Division during the World War. General offices of the Magnolia Petroleum Company were closed at 3:30 p.m. July 13, as a mark of respect and to permit employees to attend the funeral services.

JULIAN C. HALL, 58, Fort Worth operator, and general manager of the Texas Fidelity Oil Corporation until the disposal of its holdings in Texas several years ago, was fatally stricken July 15 at his residence. Funeral services were held July 17.

A. F. BOWDEN has been elected vice president and director of Lucey Petroleum Company, Dallas, according to word received from J. F. Lucey, president.

CALL SHOW MEET

Executives to consider managerial applicants

Houston. — Following approval by the board of directors, July 7, of the proposed charter and by-laws of Oil-World Exposition, Incorporated, a meeting of the executive committee has been called for noon, July 21, at the Houston Club to consider qualifications of applicants for the job of managing the exposition.

The executive committee is comprised of J. S. Abercrombie, S. P. Brown, W. L. Childs W. B. Sharp, George A. Hill, Jr., Chase Sutton, John R. Suman, Ray L. Dudley and Wallace Wilson, all of whom have been intimately connected or associated with the oil industry for a number of years.

Article II of the charter states the association is formed in support of an educational and scientific undertaking, viz: "The collection and dissemination of knowledge in relation to the presence and discovery of oil, gas, and other minerals; the production, storage, transportation, refining, and marketing of petroleum and its products; and the display and exhibition of the mechanical equipment employed in aid thereof."

Oil-World Exposition, Incorporated, proposes to be a non-profit, private corporation, headquarters in Houston. It will have no capital stock. The business of the corporation, which will consist primarily of putting on an oil and equipment show when deemed necessary, will be transacted by a board of 35 directors.

Membership in Oil-World Exposition, Incorporated, according to a motion at the last directors meeting, will be controlled by the following rule:

"The larger oil companies and manufacturers and supply companies will be asked to take out a minimum of four memberships and a maximum of 10 memberships for their employes. Smaller concerns will be allowed to buy individual memberships at $25.00 each, at the discretion of the membership committee, memberships to be issued for a period of five years."

Austin, Texas.—The Third Court of Civil Appeals has set for submission on October 14 the attack of The Texas Pipe Line Company on the new Intangible Assets Tax Law.

The Texas Company brought suit and restrained the State Tax Commissioner from certifying to counties his findings as to the amount of tax due. The company claims that the law is unconstitutional.

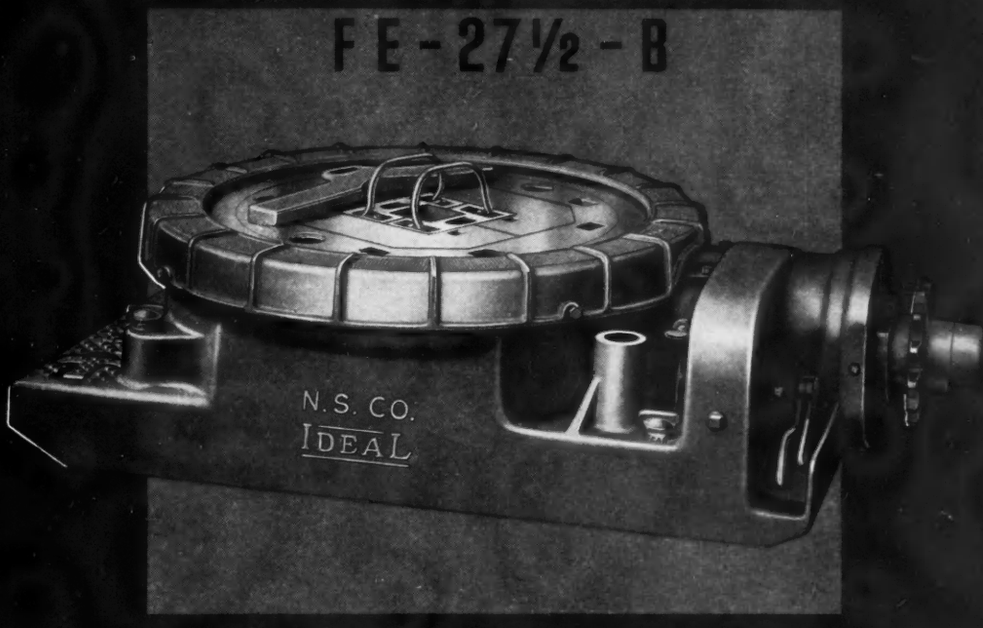
Austin, Texas.—The state has appealed from an order issued by the 126th District Court restraining the Texas Railroad Commission from interfering with the intra-state movement of Rodessa crude.

The hearing last week was on the suit brought by the East Texas Refining Company seeking to move 55,000 barrels of oil impounded by prior order of a federal court and held up because the commission did not act on the application for a tender.

IDEAL

"Reg. U. S. Pat. Off."

ROTARY MACHINE



An extra heavy, fully enclosed unit type Rotary that meets the requirements of deep well drilling of any field . . . Modern design and construction have been combined in this unit to produce an extremely smooth and true running machine which is safe, fast and economical.

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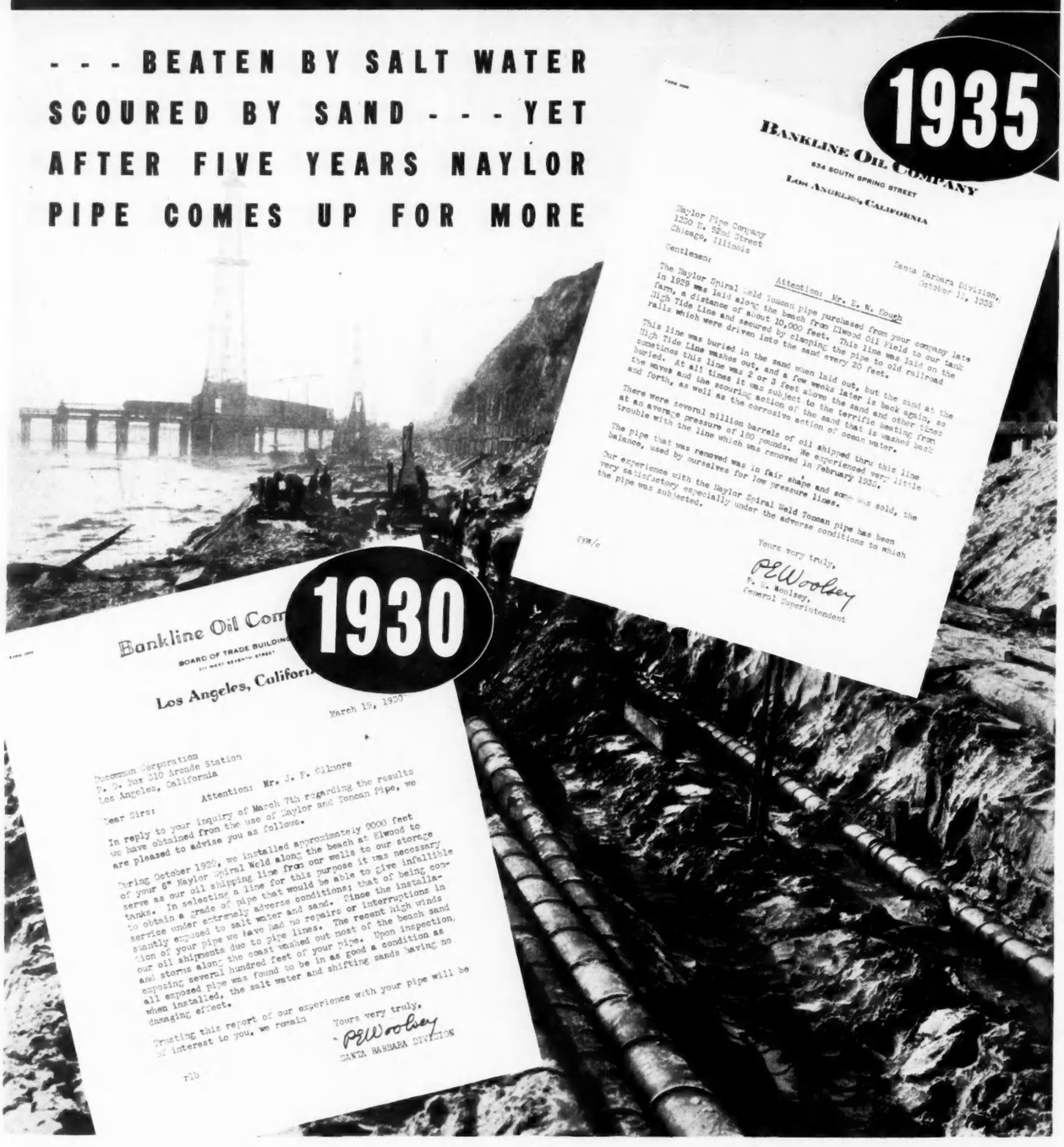
National

BUILT TO TAKE IT *and more besides!*

- - - BEATEN BY SALT WATER
SCOURED BY SAND - - - YET
AFTER FIVE YEARS NAYLOR
PIPE COMES UP FOR MORE


1935
BANKLINE OIL COMPANY
634 SOUTH SPRING STREET
LOS ANGELES, CALIFORNIA
Naylor Pipe Company
1250 E. 92nd Street
Chicago, Illinois
Gentlemen:
Santa Barbara Division,
October 11, 1935
Attention: Mr. E. W. Hough
The Naylor Spiral Weld Toncan pipe purchased from your company late in 1929 was laid along the beach from Elwood Oil Field to our tank farm, a distance of about 10,000 feet. This line was laid on the High Tide Line and secured by clamping the pipe to old railroad rails which were driven into the sand every 20 feet.
This line was buried in the sand when laid out, but the sand at the sometimes this line washes out, and a few weeks later is back again, so buried. At all times it was 2 or 3 feet above the sand and other times High Tide Line washes out, and a few weeks later is back again, so the waves and the scouring action of the sand that is washed back and forth, as well as the corrosive action of ocean water.
There were several million barrels of oil shipped thru this line at an average pressure of 180 pounds. We experienced very little trouble with the line which was removed in February 1935.
The pipe that was removed was in fair shape and some was sold, the balance, used by ourselves for low pressure lines.
Our experience with the Naylor Spiral Weld Toncan pipe has been very satisfactory, especially under the adverse conditions to which the pipe was subjected.
Yours very truly,
P. E. Woolsey,
General Superintendent
1930
Bankline Oil Com
BOARD OF TRADE BUILDING
Los Angeles, Californ
March 15, 1930
Duncannon Corporation
P. O. Box 510 Arcade Station
Los Angeles, California
Attention: Mr. J. F. Gilmore
Dear Sirs:
In reply to your inquiry of March 7th regarding the results we have obtained from the use of Naylor and Toncan Pipe, we are pleased to advise you as follows.
During October 1929, we installed approximately 9000 feet of your 6" Naylor Spiral Weld along the beach at Elwood to serve as our oil shipping line for this purpose it was necessary to obtain a grade of pipe that would be able to give infallible service under extremely adverse conditions; that of being constantly exposed to salt water and sand. Since the installation of your pipe we have had no repairs or interruptions in our oil shipments due to pipe lines. The recent high winds and storms along the coast washed out most of the beach sand exposing several hundred feet of your pipe. Upon inspection, all exposed pipe was found to be in as good a condition as when installed, the salt water and shifting sands having no damaging effect.
Trusting this report of our experience with your pipe will be of interest to you, we remain
Yours very truly,
P E Woolsey
SANTA BARBARA DIVISION
rlb

NAYLOR Spiral Lock-Seam Welded Pipe is furnished in Toncan Iron or open hearth steel—to meet requirements. To insure users maximum life for pipe lines, we recommend Naylor Toncan Iron Pipe. Where corrosion-resisting material is not a prime factor, we can furnish Naylor Pipe in open hearth steel.

With either material, the exclusive Naylor Spiral Lock-Seam Welded Structure provides greater strength than any other light weight pipe made of steel or iron of the same wall thickness. It insures unrivaled flexibility, takes care of expansion and contraction, shock loads and vibration, and protects the coupling medium and the body of the pipe itself from the brunt of these forces.

Naylor Pipe has won preference by performance.

For details and prices, call our distributors or any jobbers of oil field equipment.

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NAYLOR PIPE COMPANY CHICAGO, ILLINOIS

Paleontology

PLAYING INCREASINGLY IMPORTANT ROLE IN GULF COAST DRILLING

By BRAD MILLS, Associate Editor

PALEONTOLOGY has been an important factor in the identification and correlation of formations along the Gulf Coast. The application of this science to oil development has done much to eliminate guesswork in a number of areas that show unusual, freak or questionable formation sequences. The close resemblance of several formations that usually follow one another has led to confusion among operators who attempted to identify these zones by a casual observation of cores.

Paleontology offers the last word in correlation work. The identity and extent of several well known markers have been determined by trial and error. The transition of one formation into another, feathering out of a zone, or the outright absence of familiar formations can be determined best by an examination of cores or cuttings.

The striking resemblance of one formation to another has been very confusing, particularly where the Discorbis, Heterostegina and Marginulina are encountered in their average thickness. Several deeper and shallower formations also resemble their closest neighbor, and recent and exact correlation of several questionable zones proved that the average operator was unable to identify several series of zones in a number of areas.

Prior to the application of paleontology to the correlation of formations, operators were not in agreement as to the identity of many zones that were regarded as markers. The age of several producing zones, particularly the newer ones that had been encountered below the earlier producing horizons, was a matter of speculation.

Although the need for a positive correlation was apparent, most of the company executives and geologists failed to recognize the possibilities of a science that would identify and classify the formations. Coring had done much to establish the identity of the deeper formations, but even a good core could not always speak for itself.

The Gulf Coast paleontologist was slow to win recognition, and his early efforts were mildly ridiculed by operators who had their own ideas. A surprisingly large part of the opposition came from geologists, engineers and technicians, who were slower to accept the science than the non-technical executive and practical field man. Several of the leading Gulf Coast geologists insisted that paleontology never could contribute a great deal toward the identification of formations. Many geologists who had been accustomed to examination of cores from comparatively shallow formations claimed that foraminifera would not be found along the Gulf Coast. The presence of fossils meant little to the executive who had been accustomed to accepting the identity of cores after a field superintendent had smelled or tasted them. Identification of many formations by sight was a satisfactory practice, but deeper drilling complicated the correlation of formations that did not show definite contrasts. The early classification obviously was too general, as proved by the more recent division of a section into two or three formations.

The first foraminifera found along the Gulf Coast

Camerina moodybranchensis (Gravell and Hanna), a specimen of the Eocene larger foraminifera magnified 17.8 times. Both sides are shown.

were discovered early in 1921 by Miss Alva C. Ellisor, paleontologist with Humble Oil & Refining Company. The fossils came from a well in the Goose Creek field, and the discovery caused considerable excitement at the time. It was the custom, however, at that time to treat such a discovery as a great secret, since each company seemed to feel that the first to discover and classify foraminifera would have the advantage over other operators. The discovery was soon generally known, and from that time paleontology staged a gradual uphill fight that eventually led to its full recognition.

The first foraminifera came from the Oligocene at a depth of about 4000 feet. They were later identified as belonging to the Discorbis and Heterostegina formations of the Middle Oligocene system. The discovery offered good evidence that foraminifera would play an important role in the classification of deeper formations, since the opinion that none would be found along the Gulf Coast had been held by leading geologists. The few large companies that had been searching for foraminifera gradually increased the scope of their efforts and in a short time had made discoveries of their own that offered encouragement.

During the early struggle of paleontology to gain a foothold along the Gulf Coast, the work was a catch-as-catch-can effort. Cores and samples were not provided with a completeness or enthusiasm that gave a good record of formations, and in many instances the completed work fell far short of a full check on all zones below the first important markers. The few paleontologists who foresaw the eventual acceptance of the science stood their ground in the fight for samples and cores that would give a full record of important or questionable formations.

One of the most discouraging phases of the paleontologist's efforts to deliver a full service to his company was the lack of cooperation among field men and executives. The accuracy and value of reports that showed the identity of formations after examination under the microscope were doubted by a large percentage of the men who were asked to provide cores and samples.

Identification and classification of cores that came from an unknown level or well seemed genuine to the operator only when the paleontologist was able to take the specimen and handle it as if he needed to know nothing of its origin. In fairness to a few major operators, it might be said that they actually thought it best to withhold information on cores or samples when they sent them to the laboratory for examination under microscope. They believed that the paleontologist might be influenced by a preliminary field report that the core came from a certain level and probably belonged to a certain formation.

Unfortunately many samples were poorly collected and incorrectly labeled in the field, and in the end the paleontologist received the blame for his failure to place the sample at the desired level. The limited number of cores submitted often led to failure in an attempt to give a useful correlation. The laboratory received an occasional core, and a much larger variety of cuttings which might have been honestly taken, but which probably came from some questionable level in the hole. The early variety of cores and cuttings was a nightmare to the paleontologist who was anxious to justify the extra expense and trouble involved in the collection and classification of samples.

The paleontologist soon established himself in spite of strong opposition from both the technical and practical operating departments. As his work progressed and less doubt was cast toward the value of his reports, major companies accepted the science as a definite aid to correlation of the principal formations. Small laboratories were enlarged, and gradually classification and identification became more standardized along the Gulf Coast. Companies exchanged information and ideas, and it soon was apparent that only through cooperation could the entire geologic section be checked. The tendency to exchange ideas has grown steadily, and their findings are compared wherever there is any tendency toward doubt.

Paleontologists do not agree with each other regarding the distribution of the several type forms that are used as horizon markers, just as the geologists disagree on horizon markers. A correlation chart showing the markers designated by several leading Gulf Coast paleontologists reveals a vast difference in opinion as to the position of several formations in the geological column. The disagreement over the position of several formations in the geological column does not affect the identity of the formations, however, and regardless of the correct age of the Discorbis or the Frio, they are not difficult to spot. Their value as a marker is as great when placed in the Miocene as in the Oligocene.

Most of the companies hold to the more definite markers that are well recognized by all operators. Disagreement over the breaking down of several thick beds along the Gulf Coast has caused some trouble, and a large number of companies tie in their correlations with markers not easily questioned. One of the few markers fully recognized is the base of the green clays and shales and the top of the black shales, a sharp division that comes at or near the base of the Oligocene. Certain formations are designated differently by various companies, and the position of a few questionable markers has not been established.

In speaking of the small microfossils that are used by the paleontologist for the purpose of correlation, the word "foraminifera" occupies a predominant position in the discussion. These are often referred to as "forams", and by the field men as "bugs." It is misleading to refer to these minute animals as bugs. They are not bugs at all, but are strictly animals, so small that they are measured in terms of a fraction of a millimeter or 1/1000-inch. Foraminifera are living today in abundance and some of the living forms are direct descendants of the fossil remains of ancient forms brought up to the surface in form of well cuttings.

In the Southwest Coastal Plain, where it is necessary to deal with alternating shales and sands for the greater part, it would be a very hazardous undertaking to correlate very accurately even from one well to another across a county, using only the physical characteristics of the formations brought to the surface as the correlating agencies. Because of this difficulty, most of the large Gulf Coast companies have trained paleontologists who daily examine the cuttings not only from their own wells, but from wells being drilled by independent operators who are willing to deliver their cuttings to them. Each one of these major operators has developed its own library of forams either in the form of descriptions, or actually has mounted the forams on slides for comparison with new material presented.

It is generally recognized that little or no use can be made of micropaleontology above 2800 feet in the typical Gulf Coast well. Below this depth several "markers" come into the picture and continue to be present to the bottom of the drill hole. Certain foraminifera appear around 3000 feet, and more definite forms are encountered at various deeper levels.

Hundreds of sacks of samples generally are obtained

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Installed July 1934

FIRST set of belts gave out in three months—second set in nine months on this Oklahoma "water" well engine-to-countershaft-to-bandwheel drive. Then the G.T.M.—Goodyear Technical Man—analyzed the hook-up and found that extremely high tensions were required to meet operating conditions. On his specification two COMPASS "500" Oil Well Belts were put on. Installed in July 1934, these belts are still giving perfect service today — 24 months later. Already the COMPASS Belts have delivered twice the ***combined*** service of the two previous sets, yet their first cost was less than either of the others — and they have never required one penny's worth of repair! Innumerable instances like this throughout the nation's oil fields are evidence of the economies *you* can make by having Goodyear service-proved belting specified by the G.T.M.

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from the average wildcat drilling well, but fewer samples are necessary when drilling is carried on in the vicinity of producing wells. The late R. B. Whitehead calculated that the cost of collecting, bagging, labeling and analyzing an average oil field sample from any particular depth represented an investment on the part of the oil industry of about $15 from the time the cuttings were caught to the time the paleontological description was typewritten. He further determined at the time that the cost of obtaining a single core ranged from $25 to $100, depending on the depth.

The average oil company operating along the Gulf Coast spends from $1000 to $2500 to acquire paleontological determinations in each wildcat well, where representative cuttings are obtained. It is the custom to place a paleontologist at the well during the critical drilling period, just as a petroleum engineer or a superintendent is asked to "sit on" the well. The samples or cores are examined at regular and frequent intervals, and the paleontologist has the authority to stop drilling when a definite objective is reached. He establishes a small laboratory at the well and usually does not require outside aid in his determinations.

The proper study and classification of foraminifera found in the Tertiary formations makes possible the diagnosis of structural position of any wildcat drilling well with reference to previous drilling, without resorting to the purely physical characteristics of the horizons penetrated. This often eliminates the search for hard or soft streaks, and structural position usually can be determined without waiting for an expected succession of limes and shales. A few thin markers have been found and classified at certain intervals above major objective formations, and many companies have been able to prophesy in advance where the principal formations would be found. These advance markers give an operator an advantage over the operator who depends entirely upon major or objective markers. It often requires a long period to establish minor markers that can be depended on.

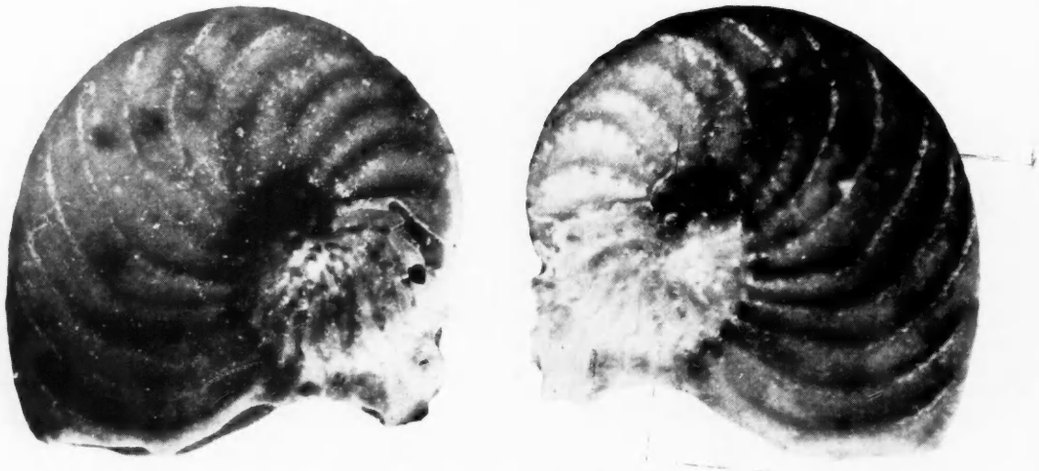
A study of foraminifera in wells in a field under development often indicates the presence of a faulted condition before the producing zone is reached. Where previous wells have run normally high or low on structure and a drilling well a location away shows a sharp displacement of a marker, it is probable that the lower formations also are affected. Such a condition points to a fault running between the previous well and the present test.

Several major Gulf Coast oil companies are willing to furnish an independent operator with a description of his cuttings within a short time after they are brought to the laboratory. This work helps both the large oil company and the smaller operator, since the former adds the knowledge to its library and the latter learns the identity of the formations in question. Independent operators who ask for classification of cuttings usually give the laboratory a full history of their recovery. Small wildcatters who bring cuttings to the laboratory and attempt to conceal facts concerning their recovery are not entitled to and usually do not receive consideration from the well established laboratories.

The larger foraminifera from the Moody's Branch marl, Jackson Eocene, of Texas, Louisiana and Mississippi have been recognized as an important marker along a belt that permits drilling to this formation. These species are the Operculina vaughani (Cushman), and Camerina moodybranchensis (Gravell and Hanna), and are large, readily observable, and fairly abundant throughout the area cited. They are found within a zone of less than 50 feet extending from Waller County Texas, eastward beyond the eastern side of Mississippi at least into Florida. Within this area they can be traced to a depth of at least 7000 feet. They are almost as large as small oatmeal flakes and a driller can detect them in a core. The Jackson, however, is encountered so deep along the coast line that the smaller foraminifera in the shallower formations of the Oligocene are chiefly considered.

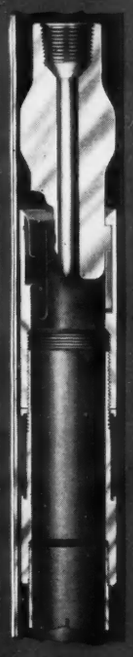
A number of competent consulting paleontologists are available, and many of the companies not maintaining laboratories deliver their samples to them for classification. Several of the larger oil companies also work with the consulting paleontologists where correlation is difficult and information on the district is meagre.

As drilling becomes deeper along the Gulf Coast and new producing formations are developed, paleontology will keep pace with progress. Classification of deeper formations is even more important than identification of the shallower zones.



Operculina vaughani (Cushman), a specimen of the Eocene larger foraminifera that is very common in Southeastern Texas and across Louisiana. Both sides of the specimen are shown; magnification 17.8 times.

The lugs on the Liner Setter Mandrel (a) fit into the "T-Slots" of the Liner Setter Adapter (b). A one-eighth turn to the right makes a positive connection which permits the liner to be raised, lowered or rotated, as conditions demand. The Adapter is connected directly to the slotted pipe when the liner is not to be packed off or suspended.



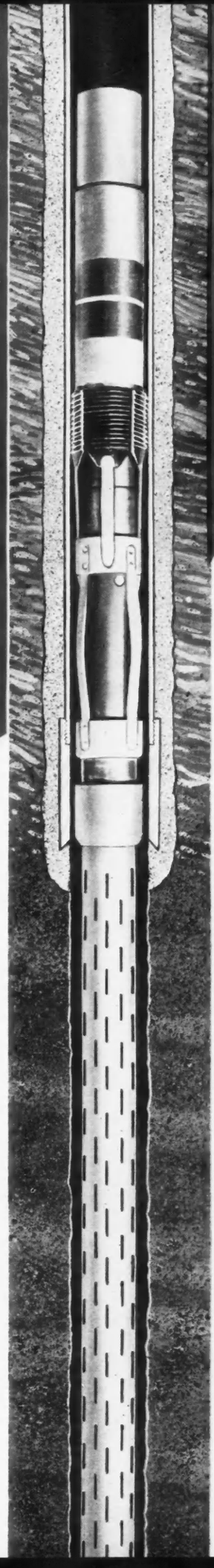
(Above, left): This is the simplest form of liner packer. The packing element is made a part of the Adapter assembly. It is expanded by rotating the top connection by means of the Setter connected to the drill pipe after the liner is set on bottom to secure a friction hold. This form is used when the liner is not to be suspended, but a secure, permanent seal between the top of the liner and the casing is required. (Above, right): The Plain Liner Hanger is used when solid support for the liner is required. The slips are positively released by partial rotation of the liner when the desired point is reached. If it is desired to pull the liner at a later time, the Liner Setter Mandrel is easily stabbed into the Adapter, and the slips released and locked by a slight turn of the drill pipe or tubing.

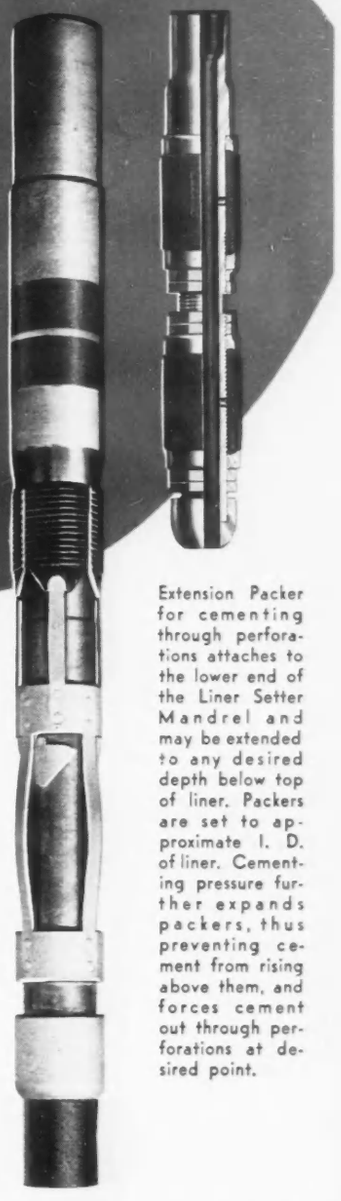
BAASH-ROSS

LINER SETTERS AND LINER HANGERS ARE SAFE!

Running and setting a liner, or pulling it from the well later on, is easy and SAFE when you use the Baash-Ross equipment shown on this page. The adapter with the ingenious "T-slots" forms the top connection of all types of Baash-Ross Liner Hangers, or is attached directly to the slotted pipe. The lugs on the simple, rugged, but efficient Liner Setter Mandrel fit into the "T-slots" of the Adapter easily, lock securely to insure maximum safety while running in and placing the liner, and permit all necessary rotation in either direction. After the liner is landed, the Liner Setter is released by a one-eighth turn. This same Liner Setter Mandrel is easily stabbed into the Adapter at any later time should it be necessary to remove the liner from the well.

Their safety and economy have made these Baash-Ross tools popular wherever liners are used. Specify the type that fits into the completion program for your next well.





Extension Packer for cementing through perforations attaches to the lower end of the Liner Setter Mandrel and may be extended to any desired depth below top of liner. Packers are set to approximate I. D. of liner. Cementing pressure further expands packers, thus preventing cement from rising above them, and forces cement out through perforations at desired point.

The Baash-Ross Lead Seal Packing Liner Hanger supports the longest liners with maximum safety. It also provides a permanent, leak-proof seal between the top of the liner and the casing. The packing is squeezed into tight contact with the casing wall by means of the weight alone of the liner transmitted to the packing element through the liner hanger body. The lead packing cannot become vulcanized to the casing, and the liner may be pulled at any later time in the same manner as the plain type Liner Hanger.

Refer to our Section in your 1936 Composite Catalog for complete descriptions of these and other Baash-Ross safe, modern oil tools. The section begins on page 115.

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Reconditioning Helps

TO LESSEN PRODUCTION DECLINE OF EDWARDS LIME WELLS

By EARL S. POST, Staff Writer

PRODUCTION decline in several Edwards lime fields of Caldwell and Guadalupe Counties has been materially lessened through reconditioning methods being employed by major leaseholders. The use of acid in connection with this work is proving highly beneficial.

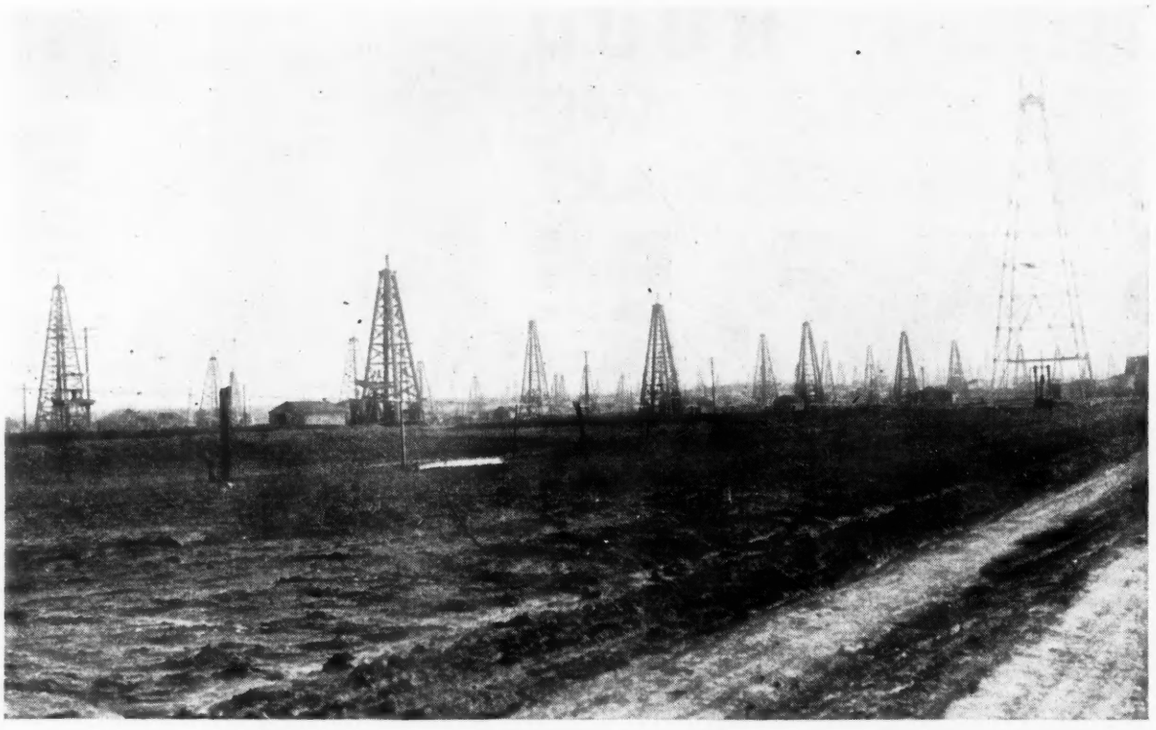
These fields produce a tremendous amount of salt and sulphur water with the oil, in many of the cases as high as 95 percent water and basic sediment to 5 percent oil. Yet, the water drive is an important agent in flushing these fields and accounting for oil recoveries of 40,000 barrels per acre and in some cases 50,000 to 60,000 barrels.

Under ordinary production methods, with the decline of flush oil production comes a heavy increase in water. In fact, it finally evolves into a proposition of pumping huge water wells and stripping a small amount of oil. Plug back methods were resorted to by merely dumping in cement and allowing it to set. The hole is made shallower cutting off the lower water. In doing this, however, some of the oil producing surface has been destroyed, thus reducing the oil production almost in proportion to the water. This was especially true in spots of the old Luling field, Caldwell County, which has been in production for some 15 years.

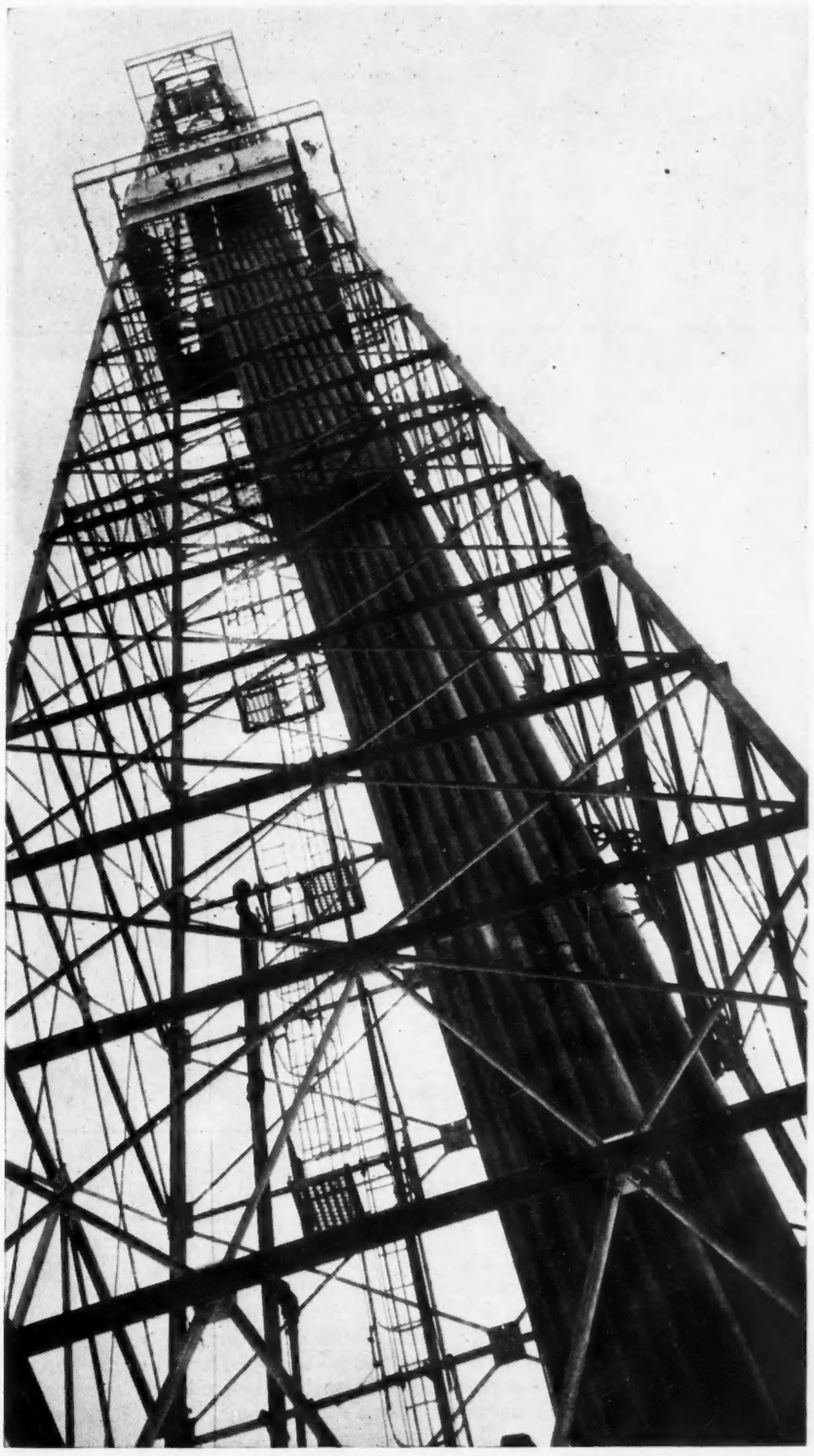
The production department of one company has been carrying on a number of successful experiments along this line. Water encroachment has been greatly reduced and oil output increased.

Some of the wells which had been plugged back

The Luling field,, where reconditioning of wells has proved of assistance in lessening production decline.



IT HAS PROVED TRUSTWORTHY . . .



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a number of times have been again drilled out to the old total depth or even deeper to remove all old cement. The hole is then recemented to near the top of the producing horizon; or in some cases into the lower portion of the casing. The cementing process is done by lowering the tubing to near the bottom of the hole, pumping in the desired amount of cement, then raising the tubing and allowing clear water to flow out of the tubing into the casing in an effort to effect complete circulation. The casing head then is closed and pressure applied to drive the cement into the formation. It has been found that the water bearing veins of the formation take the cement much more readily than the oil bearing raw mixture in these experiments is not affected by the acid treatment. This treatment is handled in the same manner as usual, except for the load of cement being pumped ahead of the treating fluid.

Water Content Lowered

Another company has been doing considerable work in reconditioning wells in this district. The majority of the projects have been to reduce the water oil ratio on these wells. This has been effected through plugging back the hole to within one to three feet of the top of the Edwards lime. In some cases the cementation reduced the water to several

Table showing results obtained by acid treating a number of Edwards lime wells in the Salt Flats Field

(Each Type Line Represents a Different Well)

Total Fluid Before Treating Barrels	Total Fluid After Treating Barrels	Percent Water After Treating	Edwards Lime Section, Feet	Point Where Acid Released	Quantity Acid Used, Gallons	Casing Depth	Net Increase Oil, Barrels
395	530	94.3	2670—2700	2670—2700	330	2670	14
80	370	89.2	2683—2698	2683—2698	330	2677	30
197	420	91.6	2743—2759	2743—2759	330	2737	20
210	263	74.1	2660—2676	2660—2676	330	2661	31
125	310	75.4	2726—2747	2726—2747	330	2726	40
88	170	26.3	2661—2687	2661—2687	330	2655	107
45	262	65.6	2639—2663	2639—2663	330	2633	82
56	243	50.6	2668—2692	2668—2692	330	2665	104
88	151	42.4	2663—2683	2663—2683	330	2658	38
105	180	45.5	2655—2678	2655—2678	330	2655	75
84	245	40	2663—2683	2663—2683	330	2660	67
63	276	72.6	2672—2691	2672—2691	330	2657	45
132	240	59.1	2581—2701	2681—2701	330	2627	61
355	497	82.5	2695—2719	2695—2719	330	2683	27
134	345	81.1	2696—2714	2696—2714	330	2684	37
330	515	97.6	2678—2698	2678—2698	330	2679	2
255	560	87.5	2666—2685	2666—2685	330	2664	55

stratum. The cementation, therefore, is so complete that when the cement is drilled out, a wall of considerable thickness remains in the water bearing portion of the stratum. The cement can be drilled out to the original producing level, thus giving a much larger area for production.

Acid Proves of Assistance

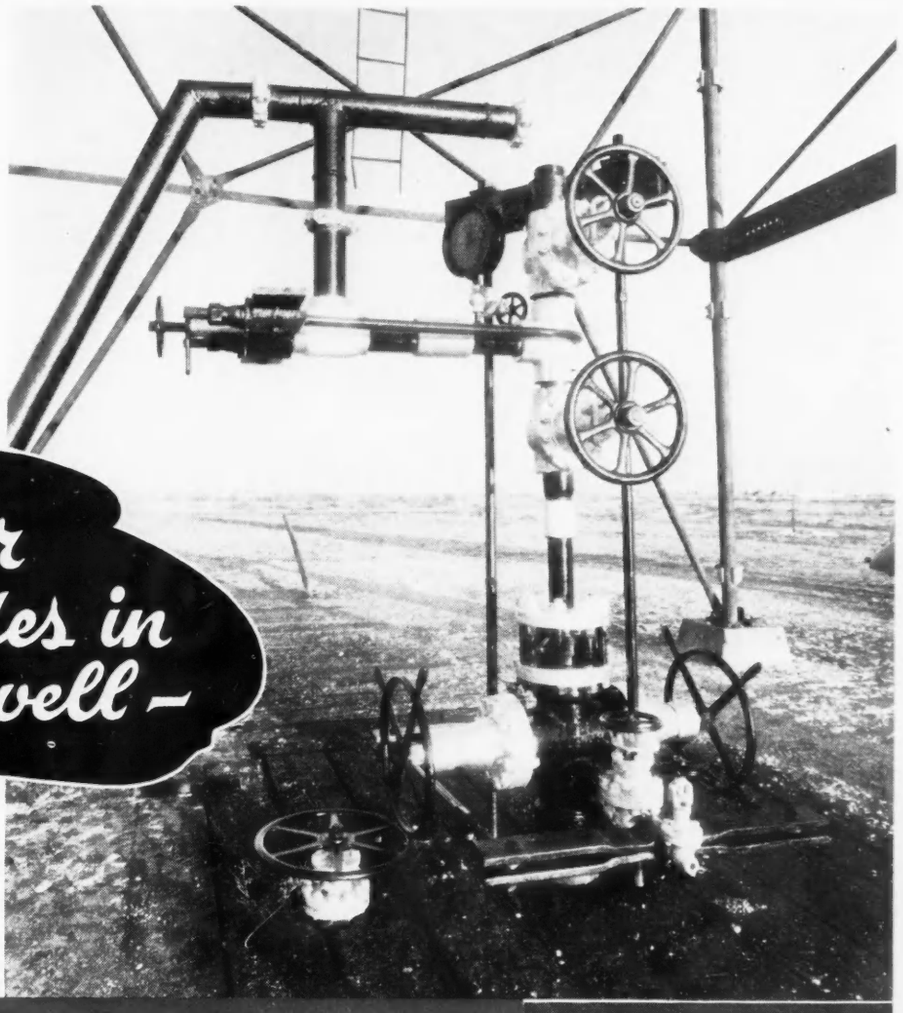
In a number of cases it has been found that after drilling out the cement a treatment of several hundred gallons of acid for a period of several hours will boost the oil production without materially increasing the water ratio. The basis for this is that the cement is driven much farther into the water bearing portion of the lime than into the oil sector.

In some cases the acid will eat downward into the lime, thus deepening the hole considerably. As a result, water will rush into the hole. This has been greatly overcome by pumping a small quantity of fresh cement into the hole ahead of the acid. The percent after the well had been making as high as 95 percent water.

The company plugged back Posey Baker 1 in the Darst Creek field to within three feet of the top of lime and treated the well with 300 gallons of solution under pressure for 24 hours. The result was that the well was recompleted for 400 barrels of fluid per day, the oil content being better than 90 percent. Before reducing, the well was credited with making 1790 barrels of fluid per day of which 1700 barrels was sulphur water and 90 barrels oil.

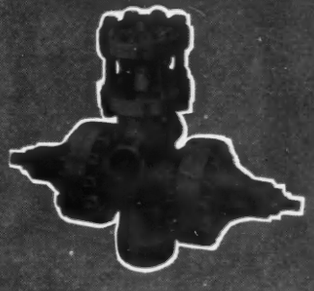
Still another company has had considerable success in blanket plugging, through cementing back all wells in a certain district to a fixed level, thus raising the withdrawal points in the entire area to above the water level.

The same company's work in acidizing has been meeting with considerable success, as is indicated by the accompanying chart of wells in the Salt Flats field, which have been treated with acid solutions.



If water intrudes in this well—

...packer can be run WITHOUT KILLING!



Because it was completed with a Cameron Master Control Tubing Head, packer may be run in this well at any time—*without killing*—to shut off water intrusion from formations above the producing sand or lime.

The Cameron Master Control Tubing Head leaves the operator a *safe* means of reentering his wells at any time to correct unsatisfactory producing conditions—and work may be done under pressure.

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Full and complete details of this MODERN method of setting wells will gladly be furnished on request.

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1. Serves as drilling-in blowout preventer.
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8. Shuts casing in without parting tubing.
9. Permits safe manipulation or pulling of tubing without killing well.
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Rig Water System

SATISFACTORY SERVICE OBTAINED FROM AN AUTOMATICALLY CONTROLLED LAYOUT

By FRANK B. TAYLOR, Staff Writer

OPERATION of an automatically-controlled single-boiler water system, using an upright condenser reducing the exhaust steam to water, over a 3-year period has proven a minimum water saving of 80 percent over the customary arrangement. The installation is adaptable to any location, and is particularly desirable where water is difficult to obtain for drilling purposes. Purification is partially obtained through semi-continuous distillation, an important advantage where it is necessary to use water with a high scale-forming content.

Developed by H. W. Price, of J. M. Huber Petroleum Company, for use with standard drilling tools, the set-up has been in service in the Texas Panhandle for three years, and has given entirely satisfactory service. The total cost of materials and labor in the fabrication of the controls was below $600. This figure includes the two necessary steam traps. This entire cost was saved on the first well drilled, proportionally reducing the cost of drilling subsequent wells.

Water Plan

Attached directly to the side of the boiler is a water-level control, automatic, and actuating the boiler-feed pump through means of an enclosed lift. This lift, raising from a float, opens orifices, allowing steam to add make-up water. This line is trap protected, condensation being discharged into the make-up tank, 2 feet 6 inches square by 6 feet in length.

Also, into the make-up tank is discharged any water collecting in a separator, located near the engine, on the 3-inch steam line from the boiler. This separator is a 10-inch nipple, 4 feet long, welded.

After the steam has been used for engine operation, it is condensed in an upright, single width, header, and is returned to the wooden make-up tank. A 2-foot leg is incorporated in the bottom center of the vertical condenser, as will be explained later. The water make-up tank for the return of the condensed steam, also serves to keep the total quantity in use in the system constant. Its level is controlled by an ordinary toilet type of floating bulb.

Steam Plan

Aside from the two water traps as previously mentioned, which spill into the make-up tank, the arrangement is conventional. A 3-inch buried line from the boiler carries the steam. The engine exhaust is led through 2-inch pipe to the condenser.

The condenser is of 1-inch pipe welded into 6-inch ends, each end being flanged at the center. Total number of 1-inch risers is 120, half being on either side of the center flange. Each 1-inch is about 20 feet in length, or one joint.

The center flanges on the 6-inch ends serve two purposes. In moving the equipment from one location to another, the condenser is broken into two sections for more convenient portability. Also, while the flange at the top of the header is open, the lower flange is blinded. This forces the steam exhausted from the engine to rise through the 60 1-inch pipes on one side of the blind and to descend through the other 60.

A certain amount of condensation will take place as the steam is rising and in order to discharge the resultant water as speedily as possible, a 2-inch water leg, 2 feet high, by-passes the blinded flange at the center of the lower 6-inch. Were this not included, the water in the first series of tubes would back up the steam entering from the engine, and would be carried over by it. This would impose a back pressure on the exhaust, and reduce engine efficiency.

Automatic Controls

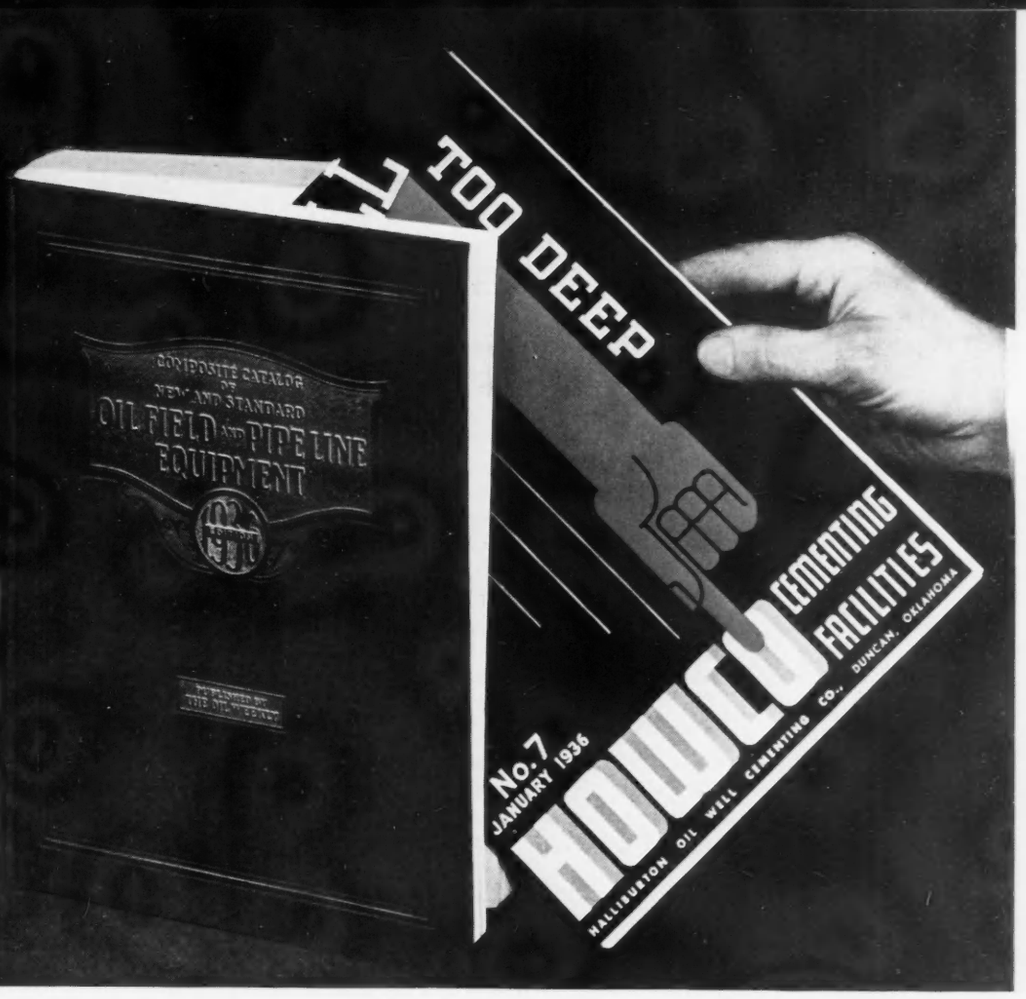
Two automatic controls, one for boiler water level, and the other to govern steam volume, are necessary, and must be fabricated.

The water-level control is a casting enclosing a spherical steel ball; hollow, serving as a lift for a sliding steam valve. The ball itself does not seat, floating on the water level. Into the top of the float is fixed a riser working through a guide. Eight holes are spaced and drilled through the top of the riser. The first 4 are ⅛-inch, the lower 4 are ¼-inch. These holes are so staggered that in rising the smaller ports are opened first, and at different levels. A continued lift due to lowered water level, opens the lower holes, increasing the quantity of steam to the boiler-feed pump.

This orificing effect is fed directly from the boiler, and discharged at the upper right as shown. Water level impulse is through the lower 2-inch connection.

The automatic control governing the boiler fuel gas supply is steam actuated. Reduced steam pressure actuates a brass diaphragm, which in turn through a ⅛-inch rubber diaphragm with fabric insert, introduces more fuel gas.

The fuel gas valve is seated against the upper diaphragm, but contains a slight notch cut into the seat to allow sufficient gas for the supply of the pilot. Increasing steam pressure raises the copper or brass diaphragm and closes the orifice, shutting off fuel



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supply. Two pressure gauges are connected to the top of the control, one of 30 pounds for fuel pressure and the other of 60 pounds for control input. The tension of the differential is controlled by a lever with movable or additional weights, as in the conventional regulator.

Fuel Control Important

The placement of the fuel control is important in general operation. If the device is placed adjacent to the boiler, it will not be as sensitive to engine requirements as when placed near the engine. Immediately that the throttle is opened, the reduced steam pressure near the engine, on the boiler line, will actuate the fuel control, feeding more gas to the burner. By placing the device further from the engine the pressure differential will not be as great, as action will be tardy. Actually, by placing adjacent to the engine, the boiler anticipates an increased demand for steam, with the opening of the throttle, and immediately pressure in proportion to the amount being required.

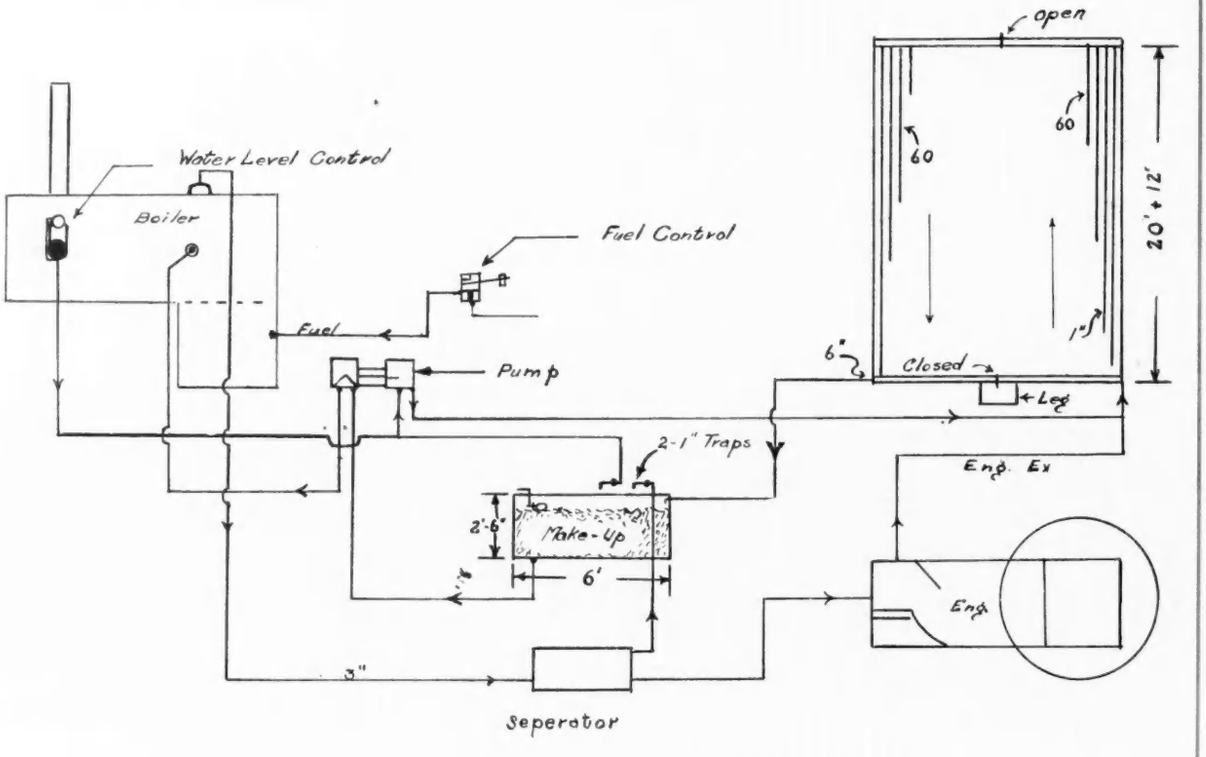
It has been found through the use of this enclosed system, that very little attention is required to assure smooth operation. The installation is sensitive, simple, and thorough. Of the 80 percent saving in water alone, a considerable portion of the lost 20 percent went in the scrubbing of the derrick floor and through coming out of the hole.

In areas where water contains a high ratio of scale-forming impurities, it would be convenient and reasonably economic to treat the supply. The conservation of make-up would only necessitate the treating of a sufficient quantity to replace that lost.

Little Attention Needed

Due to the condensation of the steam exhaust, there is an automatic purification due to boiler distillation. This is not so high, however, as to produce an excess of dissolved oxygen, which is as detrimental to boiler tubes as scale. Actual ratio of purification is slightly less than the ratio of purification. In operation it was not found necessary to dismantle or clean the boiler during a complete drilling. After a well was completed, the boiler was examined and cleaned previous to being used on another location. In some instances it was not found necessary to touch a control for 14 operating days.

One more day is ordinarily required in rigging up. The boiler line to the engine is buried and the boiler located 150 feet from the rig, as it is not necessary to give it the common attention.



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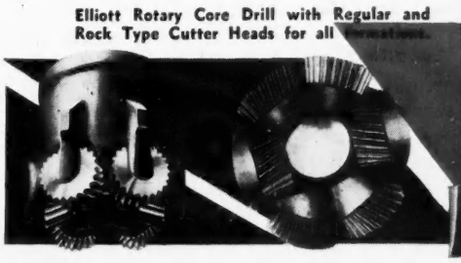

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COMPARISON OF OUTPUT AND INTAKE

Characteristics of Natural Gas Wells

IN THE TEXAS PANHANDLE FIELD

By M. A. SCHELLHARDT, Associate Natural Gas Engineer, U. S. Bureau of Mines,
Petroleum Experiment Station, Bartlesville, Okla., and
E. L. RAWLINS, Senior Petroleum Engineer,
U. S. Bureau of Mines,
Petroleum Experiment Station, Bartlesville, Okla.

PART 1

THE Bureau of Mines has made periodic back-pressure tests on numerous gas wells in the Texas Panhandle field during the past several years to study the delivery capacities of the wells under different pressure and operating conditions and to determine the relationships between pressures and rates of delivery from gas wells.[1] However, information regarding the intake capacities of gas-well systems is meager, and in projects involving the flow of gas into porous-rock reservoirs it has been necessary to determine intake characteristics of gas wells by trial. Accordingly, the fundamental intake characteristics of natural-gas wells have been studied to develop a method for determining intake capacities under different well-head pressures from data descriptive of the "output" or producing characteristics of the wells.

This article is reprinted with only a few slight abstractions from the U. S. Bureau of Mines Report of Investigations 3303.

THIS report covers studies of the output and the intake characteristics of six natural-gas wells in the Texas Panhandle field. These data are supplemented by surveys of shut-in pressures of closed-in wells near three of the wells from which pressure and flow data were obtained.

Outflow and Inflow Tests on Specific Gas Wells

Investigations[1] by the Bureau of Mines on the problem of gaging gas-well deliveries have disclosed a consistent relationship between rates of delivery of gas from a well and corresponding pressures when the pressure at the face of the sand in the well bore is used as the fundamental basis of interpretation. The relationship may be expressed mathematically by the formula

$$Q = C(P_f^2 - P_s^2)n,$$

where Q = rate of flow, cubic feet of gas per 24 hours;
C = coefficient;
P_f = shut-in pressure at the sand face, pounds per square inch absolute;
P_s = back pressure at the sand face in the well bore while the well is flowing, pounds per square inch absolute; and
n = exponent.

The producing characteristics of natural-gas wells may be studied by plotting rates of gas delivery against the corresponding pressure factors $P_f^2 - P_s^2$ on logarithmic paper. For all practical purposes the relationship established by these plotted data is a straight line; for the purpose of this report the relationship between rates of gas delivery from a well and corresponding pressure factors $P_f^2 - P_s^2$ is termed the "output" or "outflow" characteristic of the well, and the test from which this relationship is obtained is termed an "outflow" test.

When gas is delivered into a gas well the pressure at the face of the sand must be higher than the pressure in the formation surrounding the well bore, and the rate of delivery into the well is determined by the difference of the squares of the pressure imposed at the face of the sand and the shut-in formation pressure ($P_s^2 - P_f^2$). The relationship between rates of gas delivery into a well and corresponding pressure factors $P_s^2 - P_f^2$ is here termed the "intake" or "inflow" characteristic of the well and the test from which this relationship is obtained, an "inflow" test.

In conducting the outflow and inflow tests on the respective gas wells the wellhead pressures and corresponding rates of gas delivery were obtained as gas was delivered from or into each well. The outflow and inflow data were based on similar conditions of pressure and flow stabilization.

Selection of Test Wells

The wells on which inflow tests were made in this investigation were in Carson, Gray, Hutchinson, and Wheeler Counties, Texas. The selection of wells for studying the inflow characteristics was governed primarily by the following factors:

1. Distribution throughout the "sweet gas" area in the Texas Panhandle field (relatively free of hydrogen sulphide).
2. Condition of the well bore above the gas-producing strata with regard to cavings or liquids.
3. Availability of gas either directly from local wells or from compressor plants at pressures enough higher than the pressures on the respective intake wells to afford the necessary range of pressure-flow data.

Five of the wells selected probably were free from liquid or cavings, but the performance of the other well was affected materially by cavings or cuttings

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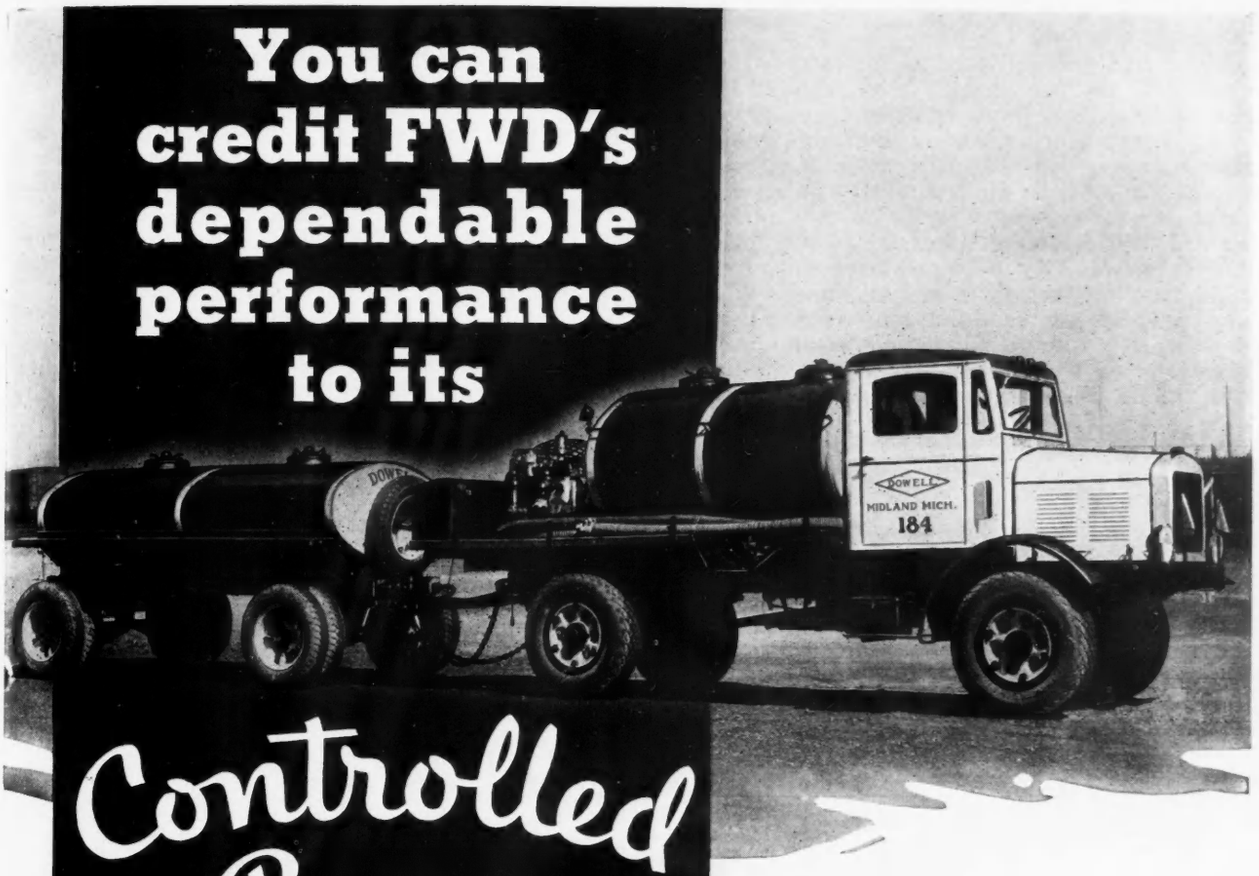

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from the formation or by pipe scale from the gas-gathering system.

The natural gas delivered to the underground reservoir through the respective test wells was obtained from other wells in the same general part of the field which were producing from the horizon to which the gas was returned. Gas delivered to the reservoir through four of the wells studied was transported directly from the source wells to the intake well through field gathering lines, and gas was delivered to the reservoir by natural pressures. In some parts of the area, however, there was not enough difference between the pressures of the respective local wells to give the desired range of data with natural pressures. Therefore, it was necessary to obtain the gas injected into two of the intake wells from the discharge of compressor plants in the field gas-gathering systems.

Pressures were measured with dead-weight pressure gages on five of the wells and with spring gages on one well. Supplemental continuous records of pressure on the wells under different operating conditions were obtained with recording pressure gages.

The rates of gas delivery from the test wells were measured with a critical-flow prover, and the rates of delivery into the wells were measured with orifice meters. A gravity balance was used for measuring the specific gravity of the gas delivered from and into the wells.

The procedure for conducting the tests on each of the six wells depended upon the operating conditions of the well and data revealed as the study of its characteristics progressed. In general, the data ob-

TABLE 1

Pressure and flow data for outflow and inflow tests on gas wells in the Texas Panhandle field

Well	Kind of Test	[1]Date of Test	Reading No.	Wellhead Pressures, Pounds Per Square Inch Gage		Pressures at Sand Face, Pounds Per Square Inch Absolute		[2]Plotting Data $P_f^2-P_s^2$ or $P_s^2-P_f^2$ Thousands	[3]Q	Specific Gravity of Gas (air=1)	Time Allowed For Stabilization of Pressure and Flow Conditions, Hours
				Shut-in	Working	[4]Shut-in P_f	Working P_s				
A	Outflow	8/22	1	[4]298	287	330	319	7.1	872	[5]0.698	[6]1 ½
			2		278		309	13.4	1,518		[6]1 ½
			3		267		298	20.1	2,273		[6]1 ½
			4		253		283	28.8	3,090		[6]1 ½
A	Inflow	8/24	1	[7]298	311	330	343	8.8	1,033	[8].681	[6]1 ½
			2		324		357	18.6	2,020		[6]1 ½
			3		335		369	27.3	2,818		[6]1 ½
			4		352		387	40.9	4,060		[6]1 ½
B	Outflow	8/28	1	[9]311	306	341	336	3.4	3,720	[8].691	[6]1 ½
			2		300		330	7.4	6,480		[6]1 ½
			3		292		322	12.5	9,850		[6]1 ½
			4		280		312	19.0	13,420		[6]1 ½
			5		265		298	27.5	17,300		[6]1 ½
B	Inflow	8/29	1	[9]311	318	341	349	5.5	4,900	[8].688	[6]1 ½
			2		322		353	8.3	6,430		[6]1 ½
			3		325		355	9.7	7,870		[6]1 ½
			4		332		363	15.5	10,700		[6]1 ½
			5		347		376	25.1	15,400		[6]1 ½
B	Inflow	9/6 to 9/12	1	[7]310	322	340	353	9.0	7,040	[10].688	[11]2⅝
			2		321		352	8.3	6,600		[11]23
			3		332		362	15.4	11,400		[11]48
			4		329		360	14.0	10,500		[11]72
			5		324		354	9.7	8,770		[11]98
			6		324		354	9.7	8,720		[11]120
			7		327		358	12.6	10,020		[11]144
C	Outflow	9/4	1	[12]260	238	290	267	12.8	2,060	[10].698	[13]1 ½
			2		227		255	19.1	2,810		[13]1 ½
			3		214		242	25.5	3,620		[13]1 ½
			4		200		226	33.0	4,420		[13]1 ½
C	Inflow	9/4 to 9/12	3		314	[14]290	348	37.0	2,417	[8].684	[11]144
			4		318		352	39.8	2,235		[11]192
C	Inflow	9/28	1	[15]268	279	299	310	6.7	1,170	[8].684	[13]1 ½
			2		284		316	10.5	1,630		[13]1 ½
			3		295		328	18.2	2,590		[13]1 ½
			4		305		339	25.5	3,420		[13]1 ½
C	Outflow	9/29 to 10/9	1	[16]260	213	290	241	26.0	1,890	[8].689	[11]144
			2		207		234	29.3	1,780		[11]192
D	Outflow	9/18	1	[17]295	278	321	304	10.6	4,800	[8].645	[6]1 ½
			2		271		296	15.4	6,110		[6]1 ½
			3		263		289	19.5	7,480		[6]1 ½
			4		253		279	25.2	8,930		[6]1 ½
D	Outflow	9/19 to 9/20	1	[7]295	283	321	309	7.5	3,581	[8].645	1 ½
			2		277		303	11.2	4,780		1 ½
			3		275		301	12.4	4,750		[18]24 ¾
D	Inflow	9/22	1	[7]295	306	321	333	7.9	3,520	[8].622	[6]1 ½
			2		313		340	12.6	5,070		[6]1 ½
			3		320		347	17.4	6,500		[6]1 ½
			4		334		361	27.3	9,160		[6]1 ½
			5		346		373	36.1	11,730		[6]1 ½
D	Inflow	9/23 to 9/26	1	[7]295	312	321	339	11.9	4,950	[8].622	1 ½
			2		315		342	14.0	4,870	.622	[19]23 ½
			3		322		349	18.8	6,650	.622	1 ½
			4		338		365	30.2	10,150	.622	1 ½
			5		339		366	30.9	9,570	.640	[19]23 ½
			6		339		366	30.9	9,580	.640	[19]48

tained during these tests included a series of working pressures gaged at the wellhead, corresponding rates of gas delivery from or into the well depending upon whether outflow or inflow tests were being conducted, shut-in pressure of the well gaged at the wellhead, specific gravity of the gas, depth of the well, and size and length of flow string in the well. The data for plotting—pressure factors $P_t^2 - P_s^2$ or $P_s^2 - P_t^2$ and the corresponding rates of gas delivery from or into the well—were determined from the observed data. The observations and plotting data obtained from the outflow and inflow tests on the six gas wells studied are given in Table 1; these data are supplemented with the following discussion of the testing procedure on each of the wells.

Well A near Borger, Carson County, Texas, was completed in 1929 with an initial open-flow volume of 22,500,000 cubic feet of gas per 24 hours and a shut-in pressure of 369 pounds per square inch gage.

The shut-in pressure of the well at the wellhead was 298 pounds per square inch gage on August 22 after being shut in for approximately 48 hours. After the shut-in pressure was gaged a back-pressure test was made on the well to determine the pressure-flow relationship for delivery of gas from the well. Working pressures and corresponding rates of gas delivery were gaged under four operating conditions.

The well was closed in after the outflow test, and the following day (August 23) the shut-in pressure on the well was the same (298 pounds per square inch gage) as that observed before the outflow test.

An inflow test was made on the well August 24.

TABLE 1—Continued

Pressure and flow data for outflow and inflow tests on gas wells in the Texas Panhandle field

Well	Kind of Test	[1]Date of Test	Reading No.	Wellhead Pressures, Pound Per Square Inch Gage		Pressures at Sand Face, Pounds Per Square Inch Absolute		[2]Plotting Data $P_t^2-P_s^2$ or $P_s^2-P_t^2$ Thousands	[3]Q	Specific Gravity of Gas (air=1)	Time Allowed For Stabilization of Pressure and Flow Conditions, Hours
				Shut-in	Working	Shut-in P_t	Working P_s				
E	Outflow	8/3	1	[7]292	253	318	279	23.3	9,900	[10].640	[6] 1½
			2		260		286	19.3	8,500		[6] 1½
			3		267		292	15.8	7,700		[6] 1½
			4		279		305	8.1	3,700		[6] 1½
			5		275		300	11.1	5,250		[6] 1½
E	Inflow	8/9	1		360	[14]318	388	49.4	10,630	[10].640	[6] 1½
			2		349		376	40.3	8,970		[6] 1½
			3		336		364	31.4	7,170		[6] 1½
			4		321		348	20.0	4,660		[6] 1½
E	Outflow	8/11	3		235	[14]318	260	33.5	9,960	[10].640	[6] 1½
			4		222		246	40.6	11,200		[6] 1½
			5		244		269	28.7	8,570		[6] 1½
			6		264		289	17.5	5,940		[6] 1½
E	Outflow	[20]8/12	1		248	[14]318	274	26.0	12,520	[10].640	[6] 1½
			2		254		280	22.7	10,730		[6] 1½
			3		260		286	19.3	9,130		[6] 1½
			4		226		253	37.1	15,630		[6] 1½
			5		272		297	12.9	6,120		[6] 1½
E	Inflow	8/13	1		348	[14]318	374	38.8	14,180	[10].640	[6] 1½
			2		339		366	32.9	12,200		[6] 1½
			3		329		356	25.6	9,800		[6] 1½
			4		317		344	17.2	6,870		[6] 1½
F	Outflow	8/15	1	[21]229	167	257	194	28.4	14,600	[10].700	[6] 1½
			2		200		227	14.35	9,600		[6] 1½
			3		206		234	11.2	8,400		[6] 1½
			4		216		244	6.5	5,900		[6] 1½
			5		184		212	21.1	12,200		[6] 1½
F	Inflow	8/16 and 8/17	1		255	[14]257	284	14.7	8,500	[8].665	[6] 1½
			2		283		313	32.0	14,400		[6] 1½
			3		331		361	64.3	23,000		[6] 1½
			4		378		410	102.1	31,300		[6] 1½
			5		438		471	155.8	42,000		[6] 1½
			6		280		309	29.5	14,200		[6] 1½

Miscellaneous Data	WELL					
	A	B	C	D	E	F
Depth of first sand—feet	2,425	2,095	2,460	1,885	1,828	2,350
Depth of last sand—feet	2,630	2,300	2,690	....	1,947	2,715
Total depth—feet	....	2,300	2,765	1,905	1,947	3,077
Size of casing—inches	8¼	8¼	8¼	8¼	8¼	10
Depth casing set—feet	2,163	2,034	[22]2,817	1,775	1,828	1,893
Size of liner—inches	6⅝	....	....	....	....	....
Depth liner set—feet	2,410	....	....	....	....	....

[1]All data obtained in 1934. [2]$P_t^2-P_s^2$ for outflow test and $P_s^2-P_t^2$ for inflow test. [3]Q in thousands of cubic feet of gas per 24 hours at pressure of 14.4 pounds per square inch and temperature of 60°F. [4]Well shut in for approximately 48 hours. [5]Specific gravity determined several days before test. [6]Pressure and flow conditions stabilized. [7]Observed just before test. [8]Specific gravity determined during test. [9]Well shut in for 7 days. [10]Assumed specific gravity. [11]These stabilization periods represent cumulative lapsed time. [12]Well shut in for approximately 3 days. [13]Pressure and flow conditions not stabilized. [14]Based upon previous outflow test. [15]Well shut in for 16 days. [16]Based upon studies of shut in pressure record. [17]Well shut in for approximately 1 month. [18]Operating condition for reading No. 2 allowed to continue to 24¾ hours for reading No. 3. [19]Operating condition for reading No. 1 allowed to continue to 23½ hours for reading No. 2; operating condition for No. 4 allowed to continue to 23½ hours for reading No. 5 and then to 48 hours for reading No. 6. [20]Well open-flowed and cavings removed before this test. [21]Well closed in for approximately 2 weeks. [22]Casing ripped 2,680 to 2,690 feet.

TABLE 2

Behavior of shut-in pressures on gas wells surrounding well B during an inflow test on well B

DATE[1]	SHUT-IN PRESSURE, POUNDS PER SQUARE INCH GAGE		
	Well B_1	Well B_2	Well B_3
9/ 6	298¾	310½	319¼
9/ 7	299½	310½	319¼
9/ 8	299¾	310½	319½
9/ 9	299¾	310½	319½
9/10	300	310½	319½
9/11	300½	310¾	319½
9/12	300½	310¾	319½
9/13	300½	310¾	319½

[1] Date obtained in 1934.

Note.—Well B_1 was shut in September 6, 3½ hours before the shut-in pressure gaged on that date was observed.

Wells B_2 and B_3 were shut in August 27, 1934.

Delivery of gas into well B was discontinued September 12, and the well remained closed in September 13.

Just before this test was begun a shut-in pressure of 298 pounds per square inch gage again was observed. Gas was delivered into the well at four different rates of flow during the inflow test. The gas came from a well about 3 miles from well A and was delivered through part of the gathering system under natural pressure.

The well again was closed in after the injection test, and a shut-in pressure of 299 pounds per square inch gage was observed the following day (August 25).

Shut-in pressures gaged on the well and behavior of pressure and flow conditions following changes in the operation of the well showed that stabilized conditions were reached in a rather short time and that the data obtained after stabilization periods of about 1½ hours represented conditions of approximate equilibrium of pressures and flow throughout the well system.

Well B

Well B near Skellytown, Carson County, Texas, was completed in 1930 with an initial open-flow volume of 53,000,000 cubic feet of gas per 24 hours and a shut-in pressure of 375 pounds per square inch gage.

The shut-in pressure of well B, gaged just before an outflow test on August 28, after the well had been closed in for 7 days, was 311 pounds per square inch gage. During the outflow test wellhead working pressures and delivery rates were observed under five different operating conditions. The shut-in pressure on the well, gaged 40 minutes after completion of the back-pressure test, was 312 pounds per square inch gage.

An inflow test was made on the well the following day (August 29). The shut-in pressure on the well, gaged just before this test, was 311 pounds per square inch gage. Wellhead working pressures corresponding to five rates of gas delivery were observed during the inflow test. The relation of the shut-in pressure of well B to that of others connected to the same gathering system made it necessary to deliver the gas through a compressor plant to obtain the desired range of pressure and flow data.

Pressure and flow data recorded during both the outflow and inflow tests were observed after stabilization periods of approximately 1½ hours. The behavior of pressures and flow in this well showed that approximately equilibrium was reached in the well system 2 or 3 minutes after changes in the operating condition of the well.

A more detailed study of the intake capacity of well B was made from September 6 to 12. Approximately 57,000,000 cubic feet of gas was delivered into the well during this period at varying rates of flow, depending upon changes in the pressure maintained on the discharge line from the compressor station—between a minimum of approximately 6,500,000 and a maximum of approximately 11,500,000 cubic feet of gas per 24 hours. The shut-in pressure gaged on the well September 6 before the inflow test was begun was 310 pounds per square inch gage; on September 12, approximately 24 hours after completion of the inflow test, it was 311 pounds per square inch gage; and on September 15 it was 310 pounds per square inch gage.

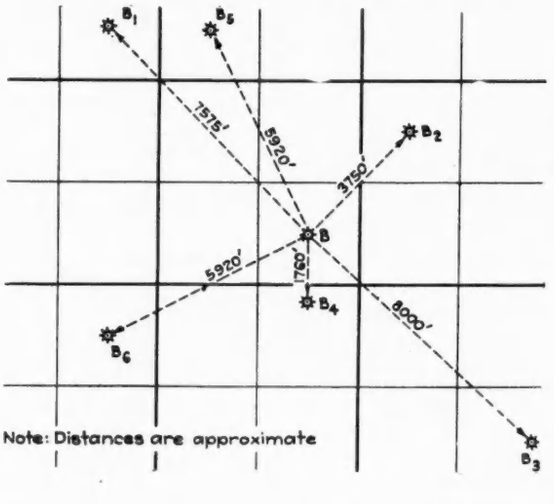
The location of the wells in the area immediately surrounding well B is shown in Figure 1. Pressures were gaged daily from September 6 to 12 on wells B_1, B_2, and B_3, which were shut in before the inflow test on well B was begun. Blank plates were inserted in the orifice-meter flanges before the test to insure that the data would be representative of changes in formation pressures and would not be influenced by leakage through wellhead connections. These data are shown in Table 2. Gas was produced from wells B_4 and B_5 during the period of the inflow test at rates of approximately 20,000,000 and 12,000,000 cubic feet of gas per 24 hours, respectively.

Another installment of this series will be published in an early issue.

[1] Pierce, H. R., and Rawlins, E. L., The Study of a Fundamental basis for Controlling and Gaging Natural-Gas Wells. Part 1.—Computing the Pressure at the Sand in a Gas Well: Rept. of Investigations 2929, Bureau of Mines, 1929, 14 pp.; Part 2.—A Fundamental Relation for Gaging Gas-Well Capacities; Rept. of Investigations 2930, 1929, 21 pp. Rawlins, E. L., and Schellhardt, M. A., Back-Pressure Data on Natural-Gas Wells and Their Application to Production Practices: Monograph 7, Bureau of Mines, (in coop. with Am. Gas Asso.), 1936, 210 pp.

FIGURE 1

Relative locations of Well B and nearby wells.



SIMPLE CONTRAPTION ASSISTS PIPE LINE STATION OPERATOR IN

Heating of Centrifuge Samples

By ELTON STERRETT, Engineer

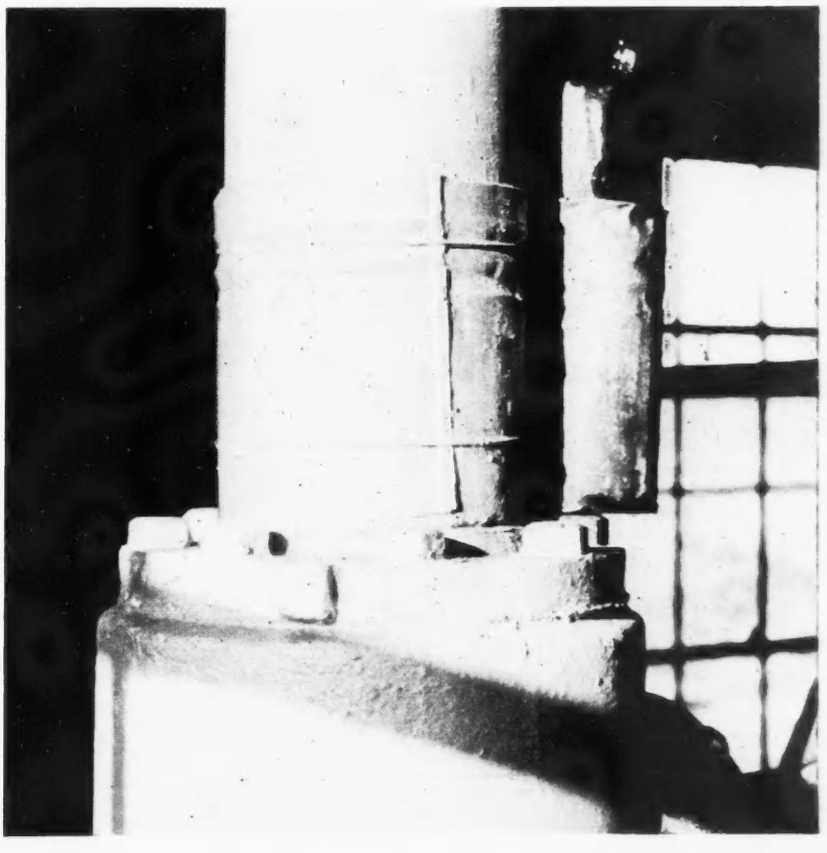
ONE pipe line station has solved the annoying problem of heating the samples of crude for the hourly centrifuge "shake-outs" by utilizing a little of the heat otherwise wasted by the exhausts of the gas engines powering the stations.

Clamped around the riser atop the muffler of one of the engines is a band of sheet iron, formed roughly like a figure 8, with one loop large enough to enclose the exhaust, the other just large enough to hold a section of three-inch pipe.

In this smaller loop of the metal band is inserted a seven-inch long section of three-inch pipe, its lower end closed by welding in a flat disc of iron. Then, placed so the base of this three-inch pipe rests solidly against the head of one of the bolts fastening muffler body and head together, there is sufficient heat transmission through the contact to raise the temperature of the water within the small pipe rapidly.

Then, filled to within an inch of the top, it is necessary only to set the Pyrex tube from the shake-out machine, already charged with its mixture of crude and gasoline, within the three-inch heater, watch it for the minute or so it takes to bring the first bubbles to the top of its contents, and place tube in the machine and run.

Should the engine furnishing heat for this economical and handy heater be down, it is but a moment's work to move the band to any operating unit, and use there.



This simple device, which clamps around and obtains heat from the exhaust pipe, aids "shake-out" runs.

May Sets New Record

BUREAU FIGURES SHOW HIGH OUTPUT AND DEMAND

WASHINGTON, D. C.

OPERATING at a new high level of 3,023,800 barrels a day, the United States oil industry in May produced a total of 93,739,000 barrels of crude petroleum, an increase of 3,260,000 barrels over the preceding month and 11,285,000 barrels over May, 1935, when production was 90,479,000 and 82,454,000 barrels, respectively, according to the monthly report of the Bureau of Mines.

Commenting upon the production record for the month, the bureau found it notable "because of the uniformity maintained in the leading producing states.

"Texas produced an average of 1,188,000 barrels in May compared with 1,187,600 barrels in April," it was pointed out, "California 576,600 barrels against 572,700 barrels, and Oklahoma 575,600 barrels against 574,200 barrels, all slight increases. Production in Kansas declined, in Louisiana and New Mexico it increased. Louisiana's new record was 224,700 barrels, all the increase over April being recorded in the Rodessa field which produced 61,700 barrels daily in May compared with 50,200 barrels daily in April. The daily average for the East Texas field, 468,900 barrels, was about 9000 below the average in April."

Daily average crude runs to stills in May were 2,924,000 barrels, or 106,000 barrels higher than in April, the report showed, the increase reflecting chiefly the change in the trend of stocks, an increase of more than 2,000,000 barrels in April changing to a decrease of several hundred thousand barrels in May.

The yield of gasoline from crude declined from the relatively high figure of 44.7 percent to an average of 44.1 percent, which was 0.2 percent under the average of May, 1935.

"The domestic demand for motor fuel almost met expectations, the total of 42,007,000 barrels being only 413,000 barrels below the bureau's estimate, but 7.5 percent higher than the domestic demand of a year ago," it was stated. "The 'deficiency' in domestic demand was more than made up in exports of motor fuel, which increased to the unexpectedly high total of 2,702,000 barrels. Stocks of finished and unfinished gasoline declined from 73,509,000 barrels on April 30 to 71,605,000 barrels on May 31. The latter was slightly more than 10,000,000 barrels higher than stocks of May 31, 1935."

Details of production and demand for the month are shown in the accompanying table.

A new high record for the daily average of crude oil run to stills was reached in May at 2,924,000 barrels, an increase of 106,000 barrels over April, according to figures compiled July 14 by the Bureau of Mines.

Receipts of crude at refineries for the month totaled 90,992,000 barrels, of which 87,943,000 barrels were domestic and 3,049,000 barrels foreign oil, and runs to stills were 90,637,000 barrels. Fuel and losses for the month were 280,000 barrels.

Supplies of crude being somewhat higher than runs, stocks increased slightly, from 61,902,000 barrels May 1 to 61,977,000 barrels May 31, it was reported.

Supply and Demand of All Oils

(Thousands of barrels of 42 gallons)

	May, 1936	April, 1936	May, 1935	Jan.-May, 1936	Jan.-May, 1935
New Supply:					
Domestic production:					
Crude petroleum	93,739	90,479	82,454	445,726	393,847
Daily average	3,024	3,016	2,660	2,932	2,608
Natural gasoline	3,275	3,265	3,091	16,767	15,614
Benzol[1]	221	204	145	970	731
Total production	97,235	93,948	85,690	463,463	410,192
Daly average	3,137	3,132	2,764	3,049	2,717
Imports:[2]					
Crude petroleum:					
Receipts in bond	268	371	474	1,223	3,145
Receipts for domestic use	2,781	2,486	2,959	11,630	9,409
Refined products:					
Receipts in bond	1,700	1,393	1,075	6,616	4,943
Receipts for domestic use	496	620	566	2,786	4,215
Total new supply, all oils	102,480	98,818	90,764	485,718	431,904
Daily average	3,306	3,294	2,928	3,196	2,860
Increase in stocks, all oils	3,304	2,314	[3]1,198	12,723	4,192
Demand:					
Total Demand	99,176	96,504	91,962	472,995	427,712
Daily average	3,199	3,217	2,966	3,112	2,833
Exports:					
Crude petroleum	4,390	3,743	4,613	17,829	16,843
Refined products	7,836	6,282	5,133	32,368	26,243
Domestic demand:					
Motor Fuel[4]	42,007	38,825	39,095	176,331	161,668
Kerosene	4,035	3,914	3,545	22,401	20,151
Gas oil and fuel oil	28,972	31,544	28,011	171,526	154,481
Lubricants	2,028	2,197	1,919	9,004	8,192
Wax	91	92	93	441	389
Coke	466	483	531	2,641	2,697
Asphalt	1,883	1,666	1,531	6,113	4,688
Road oil	593	241	478	1,335	1,195
Still gas	4,818	4,366	4,411	21,255	19,655
Miscellaneous	193	203	187	939	925
Losses[4]	1,864	2,948	2,415	10,812	10,585
Total domestic demand	86,950	86,479	82,216	422,798	384,626
Daily average	2,805	2,883	2,652	2,782	2,547
Stocks:					
Crude petroleum	315,169	315,389	338,559	315,169	338,559
Natural gasoline	5,664	5,058	5,977	5,664	5,977
Refined products	233,590	230,672	223,804	233,590	223,804
Total, all oils	554,423	551,119	568,340	554,423	568,340
Days' supply	173	171	192	178	201

[1]From Coal Division. [2]Imports of crude as reported to Bureau of Mines; imports of refined products from Bureau of Foreign and Domestic Commerce. [3]Decrease. [4]Beginning January 1936, natural gasoline losses are included in motor fuel demand.

LINE BEING BUILT

Six-inch, welded project will be used for gas

Wichita Falls, Texas.—Construction work is underway on The Texas Company's 30-mile, welded, six-inch pipe line that will be used in delivering gas from the company's properties in the Johnson field, near Crowell, to West Texas Utilities Company's power plant, located at Lake Pauline, about four miles southeast of Quanah, Texas. White Deer Pipe Line Company, Oklahoma City, is building the line, with contract requiring completion by August 8. The power company has contracted to purchase gas for 10 years.

The Texas Company's Johnson area natural gasoline plant is being increased in capacity from 2500 gallons to 5000 gallons daily, and the new units will be completed early in August. All of the residue gas from this plant and natural gas from closed in gassers in the field afford an ample supply of fuel for the power plant.

RENOVATING LINE

Corpus Christi, Texas. — Atlantic Pipe Line Company is renovating its crude line between Refugio and the tanker loading terminal at Aransas Pass, consisting of 22 miles of six- and eight-inch pipe. The line will be removed from trench and cleaned with machines. After weak spots are replaced with new pipe, or patched, the entire line will be insulated with a grease compound and wrapped.

A. C. EASTERWOOD, land man for Tide Water Oil Company, Lafayette, Louisiana, is on vacation.

Outlook Is Good

MARKETS CONTINUE TO SHOW FIRMNESS OF RECENT WEEKS

THE markets have continued to show the firmness that became evident several weeks ago, and it is indicated that the present favorable position likely will be held during the weeks immediately ahead. There are hopes that gasoline tank-car prices may show some additional improvement, but the hopes are tempered by the realization that much will depend on whether or not present strict control of wells and refineries is continued.

July, as well as June, has witnessed unusually strict control of crude production, but it is not known yet whether or not similar rigid restraint will prevail in August. The state authorities of Oklahoma, Kansas, Texas and New Mexico have been largely responsible for the successful balancing of the nation's crude production with demand, having fixed allowables relatively low in June and July. It is hoped that they will follow a similar policy when they announce August allowables within the next two weeks. But there is some doubt if the new quotas will represent quite as much restraint as those currently in effect.

Control Outlook Uncertain

The Oklahoma officials have been confronted with the opposition of some producers to the recent comparatively low allowables, and possibly will fix August allowables closely in line with Bureau of Mines recommendations, whereas they fixed quotas below the federal figures in June and July. Similarly, Kansas has been underproducing but may henceforth take full advantage of the federal allocations. In Texas too, there has arisen some agitation for higher allowables, although it is indicated that the Texas Railroad Commission will continue to fix allowables fairly closely in line with the Bureau of Mines recommendations.

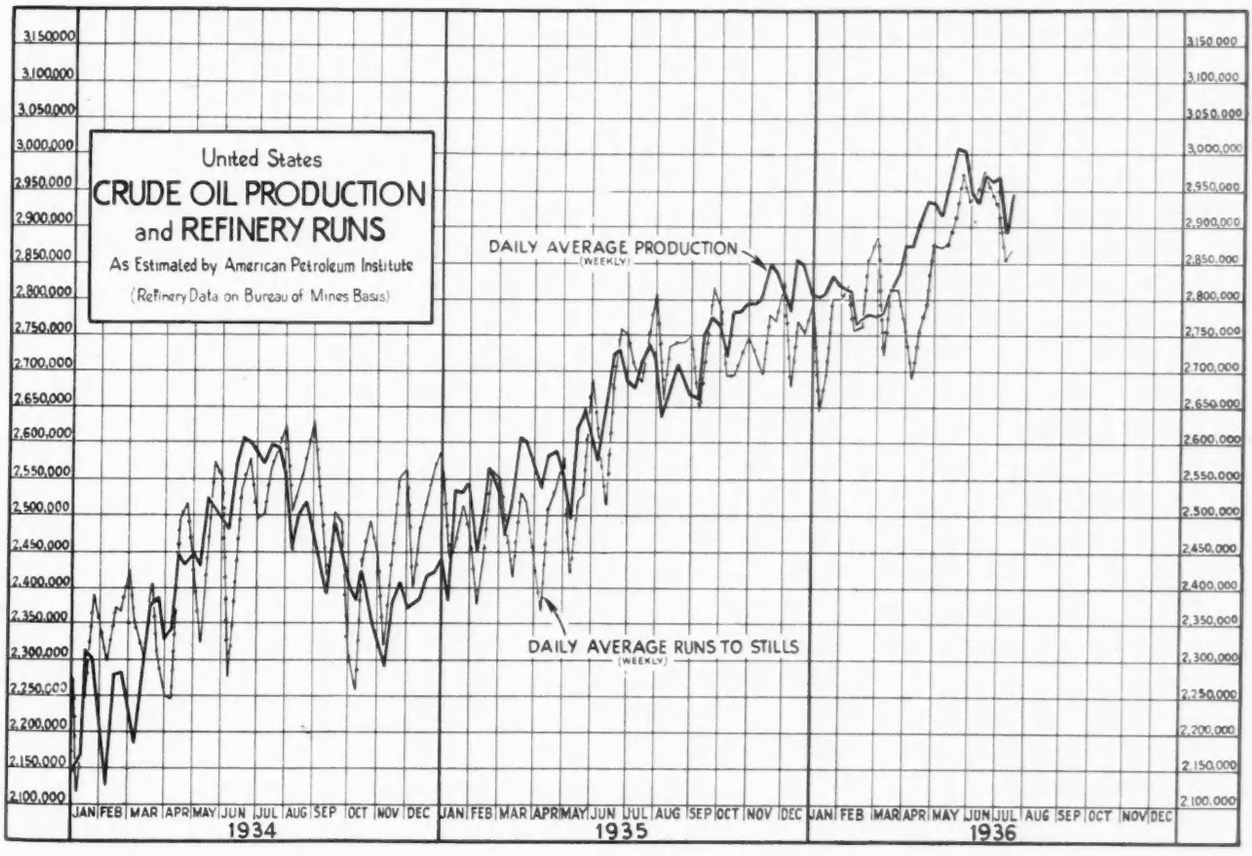
It appears likely that the scheduled meeting of the Interstate Oil Compact Commission at Dallas July 31 may tend to promote a continuation of strict crude control during August. The leading producing states of the Mid-Continent, exclusive of Louisiana, are parties to the compact; and in the interest of continued harmony, will possibly announce strict allowables for August before attending the Dallas meeting.

Gasoline Gains Further

Last week brought an extension of the gasoline market improvement into East Texas. In the previous week, third grade had advanced an eighth-cent a gallon in Oklahoma and North Texas, and last week, similar improvement had been extended into the East Texas refining district. Prices have continued unchanged, however, on the gasolines of higher octane rating.

While the going price on fully tendered third-grade gasoline in East Texas had been 4¾ cents previously, the price ranged last week up to 4⅞ cents a gallon, on some shipments. Several large shipments have been made to the Gulf Coast lately.

Hot oil output in East Texas continues comparatively low, with estimates placed around 15,000 barrels daily. On gasoline that can not be covered by federal tenders, lower prices than those above are prevailing, such material going to market within the state by rail or by truck, depending on



whether or not it is supported by state tenders.

Oklahoma Prices Unchanged

In other sections of the Mid-Continent, gasoline tank car prices last week were largely unchanged from the previous week. The prevailing prices on U. S. motor gasoline f.o.b. Oklahoma refineries were as follows: third grade, below 62 octane, 4⅞ to 5 cents; 63 to 67 octane, 5⅜ to 5⅝ cents; and 68 to 70 octane, 6 to 6⅛ cents. Approximately the same prices prevailed also f.o.b. North Texas refineries. In the Chicago market corresponding prices were: 4¾ to 5 cents, 5 to 5½ cents, and 5⅝ to 6 cents.

The kerosene market last week continued to lose ground. Apparently, the drought of the Middle West has been cutting further into the consumption of kerosene, tractor fuel, and motor fuel. Late in the week the kerosene prices f.o.b. Oklahoma refineries, off an eighth-cent from a week previously, were as follows: on the 41-43 water white grade, 3⅜ to 3⅝ cents a gallon, and on the 42-44 water white grade 3⅝ to 3⅞ cents. These same prices previously had been in effect in the Chicago territory and they continued unchanged there.

Light fuel oils have continued in slight demand, as regards immediate shipment. Although inquiries for deferred shipment have increased, actual sales on that basis are reported as continuing light.

WEST COAST QUIET

California's markets are on firm basis

THE petroleum products market in California continues in a fairly stable condition, with little visible or known chance for a break in the immediate future.

East Texas Tank Car Shipments

Week Ending July 12, 1936

PRODUCTS	No. Cars	Estimated Gallons
Gasoline	697	5,654,563
Fuel Oil	337	3,165,945
Casinghead Gasoline	237	1,979,927
Distillate	50	396,016
Gas Oil	26	214,569
Topped Crude	21	203,154
Kerosene	25	193,762
Naphtha	18	143,915
Residuum	7	56,757
Total	1,418	12,008,608
Total Previous Week	1,358	11,368,994
Interstate	515	.....
Intrastate	463	.....
Coastwise	440	.....
Total	1,418	.....

Natural gasoline is slightly weaker, but the supply is not in excess of demand, the going spot prices ranging from 7¼ to 8 cents a gallon. In some instances, small refiners are being forced to pay small premiums.

Fuel oil is holding approximately to old prices, which range from 65 to 75 cents a barrel. The Valley product is selling under the prices charged in Southern California.

Rumors are current that a few independent marketers are seeking one or more cargoes of gasoline to be shipped from the Gulf, but it is generally felt there is little chance for a deal to be closed. It would be impossible to lay down at Los Angeles a cargo of Texas gasoline at less than 7½ cents a gallon, and the delivered price probably would have to be nearer 8 cents, since a low octane gasoline would not find a good market on the West Coast, due to the high anti-knock qualities of even the lower grades of motor fuel made in California.

Crude oil production in California in the first 12 days of July averaged 584,996 barrels daily, against an allowable of 544,000 barrels. But authorities expect the average for the last half of the month to drop to a point close to 560,000 barrels daily, and there is a possibility the production the last week in the month will be close to 550,000 barrels a day.

SITUATION GOOD

Oklahoma has steady market conditions

BOTH the refined and crude oil markets stood their ground last week. No price changes were recorded on motor fuel for spot shipment. Distress material was negligible. Crude buyers were taking the well output, despite its current overtopping of the figure set by the Oklahoma Corporation Commission as desirable for that state. Actual production is holding midway between the state allowable of 526,000 barrels daily and the federal recommendation of 567,000 barrels daily.

Third-grade gasoline sold within the narrow range of 4⅞ cents to 5 cents a gallon, f.o.b. Group 3 shipping points. The better grades of motor fuel were unchanged from a week previously.

The gasoline market did not have the usual sag following a rush of holiday buying. Apparently, the material bought in anticipation of the July 4 holiday was absorbed as anticipated.

Thus far the drought and extreme heat of the Middle West has not had a detrimental influence on gasoline shipments. Some rush orders are being filled.

Over the long period for contract sales, however, there is considerable bickering. Refiners are meeting efforts to write contracts at figures lower than current spot quotations.

Indications are that for August the crude oil output for Oklahoma will be set at a higher figure by the corporation commission. Some refiners believe such a move will mean lower gasoline prices.

Summary of Wells Completed in the United States Week Ending July 18, 1936

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions 1936	Total Completions this Date 1935
Alabama	....	....	....	....	.....	2	3
Arkansas	4	1	....	3	67	53	86
California	21	20	....	1	11,002	612	457
Colorado	....	....	....	....	.....	6	6
Illinois	....	....	....	....	.....	4	9
Indiana	7	1	3	3	50	128	99
Kansas	38	26	2	10	24,448	873	764
Kentucky	12	10	....	2	278	137	92
Louisiana	10	9	....	1	9,177	565	414
Michigan	14	6	6	2	640	421	249
Mississippi	....	....	....	....	.....	5	13
Montana	3	2	1	....	395	74	71
New Mexico	12	12	....	....	24,515	313	152
New York	....	....	....	....	.....	....	....
Ohio	35	3	22	10	9	1,046	810
Oklahoma	53	45	2	6	148,112	1,593	1,306
Pennsylvania	....	....	....	....	.....	....	74
Texas	237	171	3	63	249,919	6,737	6,653
Utah	....	....	....	....	.....	....	....
West Virginia	5	1	2	2	1	385	271
Wyoming	1	1	....	....	15	33	34
Total this week	452	308	41	103	468,628	13,018	11,564
Total last week	499	349	43	107	613,957	....	....
Total this year	13,018	8,667	1,248	3,093	12,622,490	....	....

CONTRACT AWARDED

Tulsa. — Williams Brothers, Tulsa contracting company, has been awarded the contract for laying the 178 mile gasoline line to a Kansas City terminal from the Augusta, Kansas, refinery of the White Eagle division of Socony-Vacuum Oil Company. The line is to be a six-inch, welded, work to start immediately.

Comparison of Permits Granted for New Wells

STATE	Week Ending July 18	Total this Mo.	Total this Year	Total this Date Last Year	1935 Year Total
Arkansas	..	..	51	32	70
California	30	75	538	292	925
Louisiana	..	41	652	446	846
Kansas	25	103	993	524	1,204
Michigan	9	51	398	255	749
Oklahoma	47	148	1,304	1,161	2,311
Texas	236	869	8,152	5,675	10,800
Total	347	1,287	12,088	8,385	16,964

UP AGAIN

All principal areas contribute increase

UNITED STATES crude oil production averaged 2,982,625 barrels daily during the past week, ended July 18. That was 39,545 barrels a day more than in the previous week, and 65,425 barrels a day more than the Bureau of Mines recommendation for July.

The increase in production last week was the result of higher output in all of the six leading producing states. Oklahoma and Kansas showed comparatively large gains, while there were smaller increases in Texas, Louisiana, California, and New Mexico. Despite the important increases, however, Oklahoma and Kansas still were under the Bureau of Mines recommendations.

The Oklahoma production last week averaged 559,175 barrels daily, or 12,650 barrels a day more than in the previous week. The state was, however, 10,625 barrels a day under the federal allocation, despite the increase.

Kansas output was up 16,495 barrels above the previous week's level, in averaging 161,250 barrels a day, but it still was 2950 barrels under the Bureau of Mines recommendation.

Texas production last week averaged 1,140,800 barrels daily, or about 6000 barrels a day more than in the previous week. The state continued, however, about 6000 barrels a day under the Bureau of Mines recommendation.

Louisiana last week registered a 3600-barrel increase, when the state's output rose to 229,400 barrels daily. That was 42,600 barrels a day more than the federal allocation.

California averaged 584,700 barrels daily last week, or 2700 barrels a day more than in the previous week. The new rate was about 34,000 barrels a day above the federal suggestion.

New Mexico output rose to 73,800 barrels daily from 73,100 barrels in the previous week, and was 4400 barrels above the indicated demand.

OIL USE AT PEAK

Demand highest on record, prices recovering

THE first half of 1936 witnessed further substantial recovery by the oil industry and the setting of a new all-time peak of total demand for all United States oils. These facts have been pointed out in a special survey by William J. Kemnitzer, petroleum technologist.

The total demand in the first half of this year was given as 3,161,000 barrels daily. That was 10.4 percent above the 2,864,000 barrels in the initial half of 1935, and 6 percent above the previous peak demand of 2,981,000 barrels daily in the first six months of 1929.

For the first half of 1936 prices were the highest since 1930 for crude oil at the wells and for gasoline at the refineries. The price of crude oil in the

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

STATE OR DISTRICT	Bureau of Mines Recommendation (Daily in July)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING July 18	July 11
TEXAS—			
Texas Panhandle	.....	61,200	61,600
North Texas	.....	59,100	59,000
West Central Texas	.....	25,300	25,200
West Texas	.....	182,400	179,800
East Central Texas	.....	54,100	52,900
*East Texas Field	.....	426,400	425,800
†South Texas	.....	84,400	83,900
†Texas Gulf Coast	.....	247,900	246,700
*Total Texas	1,146,500	1,140,800	1,134,900
OKLAHOMA—			
Oklahoma City	.....	149,950	145,750
Seminole Area	.....	141,055	136,875
Tatums	.....	3,100	3,075
Lucien	.....	12,850	12,750
Fitts	.....	45,100	43,300
Edmond	.....	11,700	12,050
Others	.....	195,420	192,725
Total Oklahoma	569,800	559,175	546,525
KANSAS—			
Ritz-Canton	.....	6,200	6,075
Voshell	.....	2,900	3,000
Nikkel-Hollow	.....	3,850	3,875
Sedgwick	.....	5,950	5,350
Burrton-Haury	.....	13,400	13,400
Lorraine	.....	7,850	3,950
Oxford	.....	3,850	3,750
Others	.....	117,250	105,375
Total Kansas	164,200	161,250	144,755
LOUISIANA—			
North Louisiana	.....	79,600	79,700
Louisiana Gulf Coast	.....	149,800	146,100
Total Louisiana	186,800	229,400	225,800
ARKANSAS	31,300	29,800	29,300
CALIFORNIA—			
Long Beach	.....	67,200	67,500
Santa Fe Springs	.....	44,900	44,000
Huntington Beach	.....	37,900	37,000
Dominguez	.....	24,800	26,000
Inglewood	.....	11,700	11,500
Ventura Avenue	.....	35,000	33,500
Seal Beach	.....	10,400	8,000
Midway-Sunset	.....	59,800	61,000
Elwood	.....	12,300	12,000
Kettleman Hills	.....	77,600	76,500
Mountain View	.....	26,000	26,500
Playa del Rey	.....	12,700	12,500
Others	.....	164,400	166,000
Total California	550,800	584,700	582,000
MOUNTAIN STATES—			
Wyoming	38,800	36,500	37,000
Montana	13,400	17,100	16,900
Colorado	4,700	4,800	5,100
Total Rocky Mountain States	56,500	58,400	59,000
NEW MEXICO	69,400	73,800	73,100
EASTERN STATES	107,700	110,100	110,500
MICHIGAN	33,800	35,200	37,200
*Total United States	2,917,200	2,982,625	2,943,080
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	.....	15,000	15,000
Grand Total, including surreptitious production	.....	2,997,625	2,958,080

†Coastal section of South Texas is included with Texas Gulf Coast.

Crude Runs to Stills; Stocks of Fnished and Unfinished Gasoline and Gas and Fuel Oil, and Cracked Gasoline Production, Week Ended July 11, 1936

(Figures in thousands of barrels of 42 gallons each as reported to American Petroleum Institute)

DISTRICT	Daily Refining Capacity			Crude Runs to Stills		Stocks of Finished and Unfinished Gasoline				Stocks of Gas and Fuel Oil			Daily Charging Capacity of Cracking Units			Cracked Gasoline Production
						Finished										
	Potential Rate	Reporting		Daily Average	% Operated	At Refineries	Terms. Trans. Pipe Lines	Unfinished in Naphtha Distillates	Total Finished and Unfinished	Gas, Oil & Distillate	Residual Fuel Oil	Total	Potential Rate	Reporting		Daily Average
		Total	%											Total	%	
East Coast	612	612	100.0	473	77.3	6,592	11,123	875	18,590	4,867	4,981	9,848	534	534	100.0	108
Appalachian	154	146	94.8	94	64.4	1,167	1,066	281	2,514	278	222	500	79	78	98.7	27
Ind., Ill., Ky	462	444	96.1	432	97.3	5,902	2,792	785	9,479	2,468	2,157	4,625	349	348	99.7	144
Okla., Kans., Mo	453	384	84.8	298	77.6	3,530	2,219	590	6,339	819	2,571	3,390	256	228	89.1	66
Inland Texas	330	160	48.5	109	68.1	1,044	153	173	1,370	345	1,345	1,690	148	105	70.9	26
Texas Gulf	680	658	96.8	556	84.5	4,675	267	1,920	6,862	3,988	3,634	7,622	399	393	78.5	142
Louisiana Gulf	169	163	96.4	135	82.8	873	495	240	1,608	1,155	1,036	2,191	77	74	96.1	27
North La.,—Ark.	80	72	90.0	44	61.1	193	79	96	368	76	354	430	46	44	95.7	9
Rocky Mountain	97	60	61.9	48	80.0	1,168	.....	98	1,266	182	622	804	46	39	84.8	13
California	852	789	92.6	495	62.7	9,322	2,246	1,223	12,791	.....	.....	72,245	280	280	100.0	73
Reported	.....	3,488	89.7	2,684	76.9	34,466	20,440	6,281	61,187	.....	.....	‡103,345	.....	2,123	95.9	635
Estimated Unreported	.....	401	.....	186	.....	3,918	1,271	270	5,459	.....	.....	2,445	.....	91	.....	40
*Estimated Total U.S. July 11, 1936	3,889	3,889	.....	2,870	.....	38,384	21,711	6,551	66,646	.....	.....	105,790	2,214	2,214	.....	675
*Estimated Total U.S. July 4, 1936	3,889	3,889	.....	2,855	.....	39,236	21,860	6,671	67,767	.....	.....	104,895	2,214	2,214	.....	660
U.S.B. of M., July 1935	.....	.....	.....	2,739	.....	†30,550	†19,922	†5,974	†56,446	.....	.....	†108,322	.....	.....	.....	602

*Bureau of Mines basis currently estimated. †As of July 31, 1935.

‡Stocks of Gas and Fuel Oil as of July 4th were revised as follows: Indiana- Illinois-Kentucky, 4,398,000 barrels; Oklahoma-Kansas-Missouri, 3,394,000 barrels; Rocky Mountain, 788,000 barrels; Total United States, 102,450,000 barrels. All revisions occured in stocks of Gas Oil and Distlllates.

Oklahoma-Kansas fields averaged $1.04 per barrel compared with $0.94 per barrel last year, an increase of 10.6 percent. In 1930, the price averaged $1.17 per barrel. The price of gasoline at Oklahoma-North Texas plants averaged 6.1 cents a gallon, compared with 4.9 cents last year, an increase of 24.4 percent. For 1930, this price averaged 6.6 cents a gallon.

Stocks of all oils at the end of June this year amounted to 552,756,000 barrels, and were lower by 2.7 percent than the 568,053,000 barrels on hand at the end of the corresponding period last year. Stocks at the end of June this year were the lowest since June, 1926, and were 20.8 percent below the peak of 698,202,000 barrels at the end of June, 1930.

The increase in demand simultaneously with the decrease in stocks resulted in a marked reduction in the days' supply on hand to the lowest figure on record. The days' supply at the end of June this year amounted to 175, compared with 188 last year, a decrease of 6.9 percent. At the end of June, 1930, the days' supply numbered 223.

Despite the reduction in stocks on the one hand and the increase in demand on the other, a relationship resulting in the reduction in the days' supply above ground, the price of crude oil this year was 15.4 percent below "normal" (year 1926), and the price of gasoline 16.4 percent below normal.

This record of the petroleum industry for the first half of 1936 is the best since the "proration" system was invoked in 1927. The striking improvement, however, is not only the result of curtailing production at a time of increasing demand, but also is largely due to the success of cooperative efforts in the manufacturing and distributing of products. The methods leading to such improvement, of course, can continue only as long as they are not unduly monopolistic or harmful to the public welfare, the Kemnitzer report concludes.

An accompanying table gives the statistics of supply-and-demand and price in the petroleum industry of the United States during the first six-months periods for the years 1935 and 1936, as given in the report.

First 6 Months of 1936 and 1935 Compared

ITEM	Jan.-June 1935	Jan.-June 1936	Percent Change
DEMAND			
Total demand	2,864,000	3,161,000	+10.4
Exports	310,000	320,000	+ 3.2
Domestic Demand	2,554,000	2,841,000	+11.2
SUPPLY			
Domestic production	2,739,000	3,074,000	+12.2
Imports	147,000	149,000	+ 1.4
Change in stocks	+22	+62	....
STOCKS			
Total volume	568,053,000	552,756,000	— 2.7
Days' supply	188	175	— 6.9
PRICE			
Crude Oil (per barrel)	$0.94	$1.04	+10.6
Gasoline (per gallon)	.049	.061	+24.5

Hobbs, N. M.—Crude production in New Mexico was restricted during June slightly below the maximum daily yield authorized by the State's Conservation Commission. The output for June, based upon pipe line runs, amounted to 2,170,177 barrels, or a daily average of 72,339 barrels, according to compilations by C. G. Staley, proration umpire. Allowable production for June was set at 73,000 barrels daily by the state proration enforcement body, while for the same period the United States Bureau of Mines recommended a top allowable of 68,300 barrels daily.

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to July 17, 1936)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$0.94	2¢	40—$1.18	1- 9-36
N. and N.-C. Texas	28— .84	2¢	40— 1.08	1- 9-36
Texas Panhandle				
Gray County	34— .86	2¢	40— .98	1- 9-36
Carson-Hutchinson	34— .81	2¢	40— .98	1- 9-36
West Texas				
Ector, Pecos, W'kler Crane, Upton, Howard and Glasscock	29— .76	2¢	36— .90	1-14-36
West Central Texas	28— .84	2¢	40— 1.08	1- 9-36
East Central Texas	28— .91	2¢	40— 1.15	1- 9-36
East Texas	*1.15			1- 9-36
Talco	* .60			4-15-36
Texas Gulf Coast				
Anahuac-Dickinson	30— 1.04	2¢	40— 1.24	1- 9-36
Conroe	35— 1.24	2¢	40— 1.34	1- 9-36
Tomball	*1.30			1- 9-36
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble,	Below			
Rabbs Ridge	17— .88	2¢	34— 1.22	1- 9-36
South and S. W. Texas	Below			
Refugio (Light)	17— .88	2¢	34— 1.22	1- 9-36
Refugio (Heavy)	* .90			1- 9-36
Saxet	* .90			1- 9-36
Mirando	* .85			1- 9-36
Pettus	*1.25			1- 9-36
Salt Flat	* .97			1-14-36
Darst Creek	* .97			1-14-36
Placedo (Heavy)	* .85			4- -36
Placedo (Light)	* .95			4- -36
Port Lavaca	* .97			
Plymouth	* .90			12-17-35

* All gravities—flat rate.
† Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Arkansas				
El Dorado (Light) and Rainbow	25— .78	2¢	40— 1.10	1-10-36
El Dorado East Field and Smackover	* .75			1-10-36
North Louisiana	25—$0.78	2¢	40—$1.10	1-10-36
Urania	* .97			1-10-36
South Louisiana	Below			
Lockport	19— .92	2¢	34— 1.22	1- 9-36
Iowa, Cameron Mds.	Below 19— .82	2¢	34— 1.12	1- 9-36
Rocky Mountain States				
Salt Creek	29— .94	2¢	40— 1.18	1-10-36
Elk Basin	*1.28			1- 9-36
Grass Creek (Light)	*1.28			1- 9-36
Grass Creek (Heavy)	* .58			1- 9-36
Big Muddy	*1.11			1- 9-36
Rock Creek	*1.12			1- 9-36
Sunburst	*1.15			6- 5-36
Lance Creek	* .90			1- 9-36
Osage	*1.08			
Cat Creek	*1.07			8-25-33
Cut Bank	*1.35			6- 3-36
Pondera	*1.05			9-29-33
Hog Back, N. M.	*1.00			9- 8-33
Lea County, N. M.	* .75			9-29-33
Mid-West States				
Lima	*1.25			1-10-36
Illinois	*1.23			1- 9-36
Princeton	*1.23			1- 9-36
Western Kentucky	*1.23			1- 9-36
Pennsylvania				
Bradford	*2.45			1-13-36
Sw. Pa. Pipe Line	*2.17			1-13-36
Eureka Pipe Line	*2.12			1-13-36
Buckeye Pipe Line	*1.97			1-13-36
Corning Grade	*1.42			1-13-36
Michigan				
Central Michigan	*1.42			6-15-36
Muskegon	* .70-1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

* All gravities—flat rate.
‡ Average price, all oil sales being to small refineries.

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid.-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
August 11, 1933	Up 10	.....	.....
August 24, 1933	.....	Up 10	.....
August 30, 1933	Up 15	.....	.....
September 6, 1933	Up 10	Up 10	Up 15
September 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25	.....	.....
January 4, 1935	Up 15	.....	.....
February 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
August 29, 1935	.....	.....	Cut °4
September 6, 1935	Up .5	.....	.....
October 29, 1935	Up 15	.....	.....
November 1, 1935	.....	.....	Up °28
November 18, 1935	Up 15	.....	.....
December 6, 1935	.....	.....	Up °9
January 9, 1936	.....	Up 10	.....
January 13, 1936	Up 15	.....	.....
February 26, 1936	.....	.....	Up '5

CRUDE PRODUCTION TAXES

Oklahoma—Five percent of gross value less royalty interest.

Texas—Two cents or 2 percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Two percent of gross value at well and ⅓ of 1c per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

* All gravities—flat rate.
° Signal Hill 26 gravity.
' Seal Beach 26 gravity.

CALIFORNIA OIL PRICES

(All gravities above those quoted take highest prices of that field. Effective February 26, 1936)

Gravity	Signal Hill	ca Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canyon	Athens Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier East Coyote La Habra	Montebello	West Coyote Hills	Santa Fe Springs	New Hall McKittrick Kern River Round Mountain	Mountain View	Midway-Sunset Buena Vista Hills Elk Hills	Lost Hills	Coalinga	Wheeler Ridge
14–14.9	$.80	$.79	$.78	$.79	$.80	$.76	....	....	$.80	$.76	$.76	$.77	$ 78	.....	$.70	....	$.70	$.70	$.70	....
15–15.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
16–16.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
17–17.9	.80	.79	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
18–18.9	.80	.79	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
19–19.9	.82	.79	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	.....	.70	$.70	.74	.74	71	$.70
20–20.9	.85	.79	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	.....	.....	.70	.78	.78	.72	.70
21–21.9	.88	.79	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	.78	.....	.73	.82	.82	.74	.70
22–22.9	.92	.82	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	.....	.77	.87	.86	.78	.72
23–23.9	.95	.86	.96	.99	1.02	.96	$.84	....	.96	.88	.93	.82	.92	.78	.....	.80	.92	.90	.82	.76
24–24.9	.99	.91	1.00	1.02	1.06	.99	.88	....	.99	.91	.96	.85	.96	.82	.....	.84	.97	.94	.86	.79
25–25.9	1.03	.95	1.03	1.05	1.11	1.03	.93	....	1.02	.95	....	.89	.99	.86	.....	.88	1.01	.98	.90	.83
26–26.9	1.06	1.00	1.07	1.09	1.16	1.06	.98	....	1.05	.98	....	.92	1.03	.90	.....	.91	1.06	1.02	....	....
27–27.9	1.10	1.05	1.11	1.12	....	1.10	1.03	....	....	1.02	....	.96	1.06	.95	.....	.95	1.10	1.06	....	....
28–28.9	1.14	1.10	1.14	1.15	....	1.14	1.07	....	....	1.06	....	.99	1.10	.99	.....	.99	1.15	1.10	....	....
29–29.9	1.17	1.15	1.18	1.18	F.O.B.	1.17	1.12	....	....	1.09	....	1.03	1.14	1.03	.....	1.02	1.20	1.14	....	....
30–30.9	1.21	1.19	1.22	1.21	Pipe	1.21	1.17	F.O.B.	....	....	....	1.07	1.17	1.08	.....	1.06	1.25	1.18	....	....
31–31.9	....	....	....	1.24	Line	1.24	1.22	Ship	Kettleman Hills			1.11	1.21	1.12	.....	1.09	1.29	....	....	....
32–32.9	....	....	....	1.27	....	1.27	1.27	....				1.14	1.25	1.16	.....	1.13	1.34	....	....	....
33–33.9	....	....	....	....	....	....	1.32	$1.28		1.19		1.18	1.28	1.20	.....	1.17	1.38	....	....	....
34–34.9	....	....	....	....	....	....	1.37	1.32	....	1.23	....	1.22	1.32	1.25	.....	1.20	.....	....	....	....
35–35.9	....	....	....	....	....	....	1.42	1.35	....	1.27	....	1.25	....	1.29	.....	....	.....	....	....	....
36–36.9	....	....	....	....	....	....	1.46	1.39	....	1.31	....	1.29	....	1.33	.....	....	.....	....	....	....
37–37.9	....	....	....	....	....	....	1.51	1.43	....	1.35	....	1.32	....	1.37	.....	....	.....	....	....	....
38–38.9	....	....	....	....	....	....	1.56	....	....	1.39	....	1.36	....	1.42	.....	....	.....	....	....	....
39–39.9	....	....	....	....	....	....	1.61	....	....	1.43	....	1.40	....	.....	.....	....	.....	....	....	....
40–40.9	....	....	....	....	....	....	1.66	....	....	....	....	1.43	....	.....	.....	....	.....	....	....	....

Edited by
WM. V. GROSS, Associate Editor

SOME ASPECTS OF A GEOLOGICAL EXPLORATION FOR OIL IN THE *Upper Amazon*

By VICTOR OPPENHEIM, Consulting Geologist,
Department of Mines, Rio de Janeiro, Brazil

WE often read technical reports of geologists from all parts of the world, reports that are the expressions of scientific facts, geological observations and logical deductions. But how few, even amongst the scientific or professional readers, realize what hardships and personal sacrifices are so often connected with the activities of a field geologist, and the high price, including risk of health and even life, that a geological investigation in unexplored or little accessible regions sometimes means?

But knowing it we realize that there is a power above material interest that drives the geologist through many trials unerringly towards his aim, to approach the truth and reveal the secrets of the rocks beneath his feet.

This introductory note refers particularly to the region of the Rio Jurua, in the Territory of Acre, Brazil, at the east, and the valley of the Rio Ucayaly, Departamento de Loreto, in Peru, at the west.

The region is little known and the most of it, geologically unexplored; this induced the Deparment of Mines to undertake an exploratory study of the distant Brazilian Territory of Acre in the upper Amazon.

Leaving Manaos, the capital of the State of Amazonas, in August 1935, the writer went up the Amazon River and one of its largest tributaries, the Rio Jurua, by steamship and motor boat. Cruzeiro do Sul, the capital of the Prefeitura do Alto Jurua and the last place accessible for navigation at this season of the year, was reached in September. Years ago this was an important rubber concentration center, with many thousands of "seringueiros" searching for and collecting rubber in the surrounding forests. Today it is a sleepy, forgotten village.

Here were left behind the two colleagues, who had accompanied the writer this far, as well as the last remains of civilization. Alone, with some eight natives in two canoes carrying instruments, provisions for about a month, rifles, shotguns, ammunition and some medicines, mainly quinine and antiophydic serum, the writer entered the Rio Moa, an affluent of the upper Jurua, a region notorious for its malarial fevers.

For many days the canoes, pushed by round Indian paddles, struggled up the Rio Moa, which at this time of the year is swift and muddy.

The surrounding region, flat and swampy, covered with impenetrable, virgin forest, is all cut by slow streams, dark, quiet lakes and ponds, full of exotic varieties of Amazon fish and reptiles.

Occasionally high banks, called "terra firme" would appear to alter the monotony of the wild landscape and furnish a key for the geology of a wide area.

A main tributary of this river was entered—a rather narrow but very extensive stream. Here began the real hardships. For days the party was slowly crawling upstream, constantly fighting water and the numberless trees and trunks which had accumulated at the sharp turns into real barriers extending from one bank to the other. Hours and hours, frequently a whole day, would be spent just in cutting a "tunnel" through the chaotic mass of trees, trunks, roots and branches, full of rotting leaves and insects; or, if the way were found to be too hard to open, the canoes and cargoes would be dragged over the obstruction. There were days when more work would be done with the axes and "machetes" opening a way for the canoes, than actually paddling. Finally the headwaters of the stream were reached and from here no further progress could be made by water since, in addition to the fallen masses of trunks, the forest itself, with its branches and endless vines, completely entangled the party.

By this time many of the native crew had fallen sick and had to be sent back, being substituted by the local "nucuiny" Indians. Though ferocious looking when tattooed, they are rather obedient and not bad natured. They are very good hunters and, of course, as much at home in the thickest forest as the civilized man would be on the streets of his home town. The Indians were of great help during all the journey, particularly when provisions gave out and it was necessary to live exclusively on what the guns could give us.

As soon as the river and canoes were left behind, all the belongings—instruments, camp gear, medical supplies, rock samples and fossil collections—had to be carried on the backs of the men in a sort of basket made of thin vines called "jamachin." Each man would carry from 25 to 35 kilos, including his own sleeping hammock, mosquito net and a few other belongings. It should be said that even natives seldom travel here without a mosquito net and a rubber bag, the first to protect themselves from swarms of insects and often vampires; the second to protect their belongings as much from water and humidity, as from ants.

For weeks the party was crossing the endless chaos of this green hell,—swampy ground, covered with fallen rotting trees and branches, or else there were sharp treacherous thorns and vines surrounding all like a net. The thick ceiling of vegetation would not allow a single ray of sunlight to pass. Half darkness and humidity, a suffocating heat and no water to drink! The tired men could hardly carry themselves; starting with the daylight and camping only at sunset it was not possible to progress more than a few miles per day. The compass or the sun was the only guide since none of the men had ever been in this part of the jungle. All baggage of course had been reduced to a minimum and everything not strictly essential left behind in the forest. Progress was slowed down even more after one of the men had been stung by a poisonous snake known as "surucucu" and for days it was necessary to carry him, swollen and feverish. Two more accidents with poisonous snakes happened later during the trip.

All this time the principal food had been monkeys and land turtles, "jabuti," that abound in this region. Incidentally in this part of the world it was not necessary to go far for provisions; the natives would call some monkeys and birds by imitating their cries and then waiting with bow and arrow or gun for the answering animal to appear. Game however, was not always abundant, and there were areas where for days no trace of life would be seen. This is one aspect of transportation conditions that

a geologist has to face while exploring this paradise of tropical flora and fauna.

Finding Outcrops

Another and quite different problem is to find outcrops, contacts or any appearance of rock at all! The thick, green and brown carpet of living and dead vegetation, **several meters deep,** makes it exceedingly difficult to trace outcrops and to find good ones is even more difficult. Still every hill would be climbed in order to locate other elevations. Very fortunately for the geologist, where there are hills outcrops can be found; it is also true that when the lower regions begin to be inundated most of the snakes can be found around these same hills and generally near the outcrops.

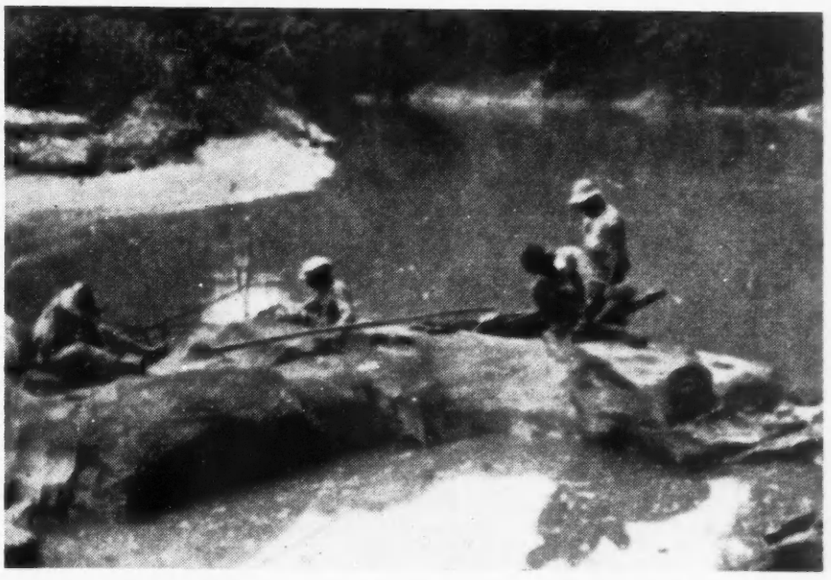
The best outcrops are here found along rivers and streams on their banks or in their beds, particularly when they carry little water or are dry. The very variable level of water is characteristic of most rivers of the Amazon system and the regions of headwaters, especially those which depend upon rains. A stream that is a whirling torrent after a rain is found almost dry a few hours after the rain has passed.

When the party reached the upper valley of a certain river they found after long explorations to the south of it, and much to their surprise, that many of the rivers, some of which were quite important, which they had crossed during the journey, did not figure at all on any of the existing maps.

Having explored the greater part of the area on this side of the water divide, the writer then crossed the "divortium aquarium" entering the waters of the valley of Ucayaly in Peru. That again meant long and painful cross country hiking, with all its hardships, and though the experience increased, the men also were more exhausted.

Mythical Mountain Range

Another important fact was observed. A mountain range, figuring on the map as forming the proper water divide between the systems of the Rio Jurua and the Rio Ucayaly, actually does not exist. The country really is rather low and swampy with a hilly range much further to the east in Brazil, or near the banks of the Ucayaly in Peru.

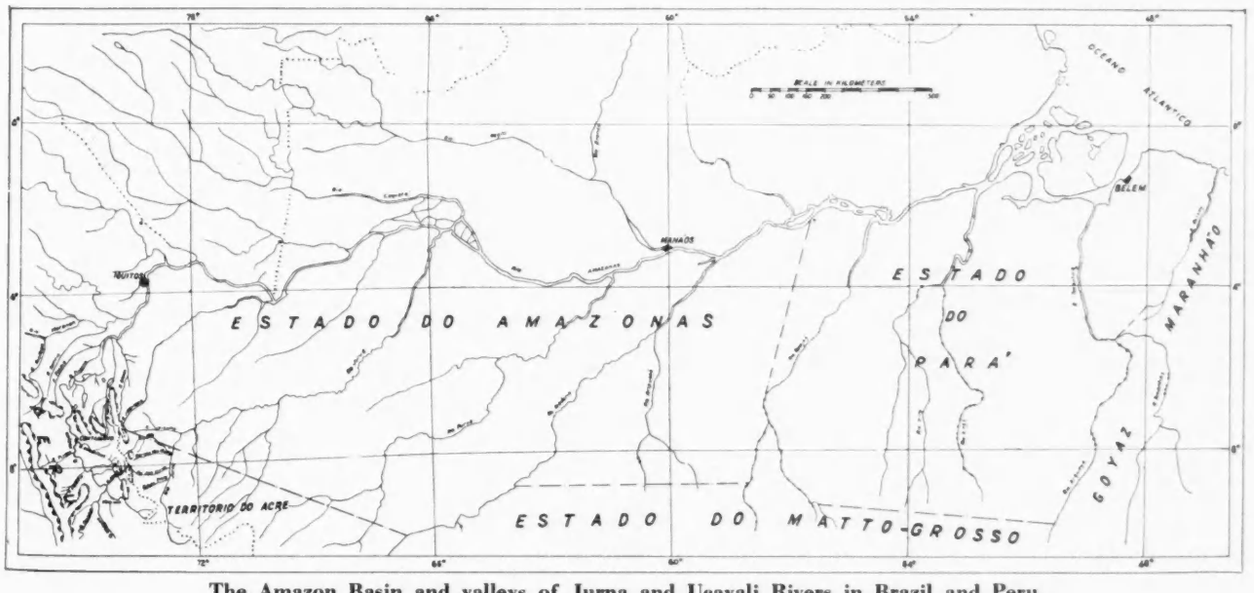


This is what is called a relatively good outcrop in Upper Amazon country. Oppenheim's party is examining the rock.

The region being structurally active, important observations could be made and those correlations demanded further explorations westward. That is why for many weeks the little group, by this time composed almost totally of Indians, could be seen either tearing its way through the jungle from one outcrop to another or else going down the fast and deep rivers of the region in improvised dugouts. Particular caution was taken when the party approached the valley of the Rio Blanco inhabited by a savage tribe of Mayus Indians. These let no one enter their territory, killing even the occasional hunter, who happens to enter the waters of that river. Finally the banks of the great Rio Ucayaly were reached, approximately three months after leaving the waters of the Brazilian Rio Jurua. The Rio Ucayaly and the Rio Maranon are the two big water systems, which after their junction, form the great Amazon River. At the point where the party reached the Ucayaly, near the mouth of the Rio Tapiche, it is nearly a thousand meters wide and seemed like a shining ocean after the months passed in the moist half-light of the jungle.

Oil Seeps

Later when civilized outposts were reached, Peruvian service airplanes were of great help in extending the explorations along the lower and middle part of the valley of the Ucayaly, as well as the supper section of the Amazon River, below the junction of the Maranon and Ucayaly. Further explorations by land of the eastern part of



The Amazon Basin and valleys of Jurna and Ucayali Rivers in Brazil and Peru, explored by V. Oppenheimer from August, 1935, to February, 1936.

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the valley of the Ucayaly revealed interesting geological features. The presence of several sulphur springs and oil seeps make the region one of interest for further geological investigation.

After some months of exploring and after repeating the same process of hiking or else pushing a dugout up one of the tributaries of the Alto Ucayaly, the remains of the party, by now entirely changed several times, for even Indians have a limit of physical capacity, finally reached again the headwaters of a tributary of the Rio Jurua in Brazil.

The rainy season was now in full strength, great extensions of dry land were transformed into huge lakes, making it impossible to camp anywhere or make fires. It rained day and night. This, however, had its advantages. Our dugouts did not have to be pushed over shallow waters any more, and the rapid streams carried us down to the Rio Jurua.

In February when the writer was again in the waters of the lower Amazon, which he had left a half year before, the great river was as wide and impenetrable as ever, but so many of the secrets of her headwaters had now been unveiled.

WILDCATS PLANNED
Delbonita, Twin River and Rosslake structures

Frank E. Ruben, Los Angeles, Lethbridge, Alberta, oil man, recently announced on his return from Toronto and New York the organization of Delbonita Associated Oils, Limited, which will develop the new company's blocks of acreage on the Delbonita, Twin River, and Rosslake structures in Southern Alberta, Canada. The company's operations will include a three-well program—completion of the Twin River 3, a new well on the Ross Lake structure, and a third on the company's Delbonita acreage. The Twin River and Ross Lake wells will be drilled this season, and the Delbonita well later.

Sunshine Oils Limited expected to spud in June 19 on a wildcat well on Del Bonita structure in Alberta, Canada, according to word received from Hugh H. Reid. Location for the wildcat was chosen by Joseph S. Irwin, geologist, Calgary.

PROTEST FUEL TAX

Oil companies of Calgary, Alberta, Canada, engaged in drilling new wells in the district, have been informed by the provincial treasurer's department that consideration is being given their protests against the heavy tax levied on fuel oils being used for drilling purposes.

Under the Fuel Tax Act of 1936, a tax of 7 cents per gallon is levied upon fuel oil, a rebate of 6 cents per gallon being given companies using the commodity in course of development of Alberta's natural resources. Even with the rebate, the tax is regarded by drilling concerns as almost prohibitive, and strong protests have been registered.

Moore Is Narrow

FAILURE CENTERS INTEREST IN POSSIBILITIES NORTHWEST

WEEKLY STAFF REPORT

Oklahoma City. — Previous indications that the Moore pool of Cleveland County would be defined as being quite narrow structurally, have been proven by Sinclair Prairie Oil Company et al's Hussman 1-B, NEc SW 21-10-2w, a test of the community-owned block, which bailed to water from the second Wilcox sand. The test is located less than a half mile north of the same interest's Franklin 1, and about a quarter-mile to the west of the pool's discovery well. Hussman 1-B topped the Wilcox sand at 7333 feet and drilled to a total depth of 7354 feet, 21 feet into the sand. The last 10 feet showed good saturation, but when bailed made salt water to prove a water table as was previously indicated in Hussman 1, a dry hole a half-mile to the south.

Due to limitations interposed by Hussman 1-B, interest in the area will be centered in the possibilities of extending production to the northwest, and to the drilling wells in that direction that are at important depths. Hussman 1, the previous test to find water, was drilled to 8025 feet, with water showing in the first 10 feet of sand.

In addition to the 3 wells so far proven in the Wilcox sand, 7 are drilling to define the structure within the next 60 days. Hussman 1-B checked 202 feet lower than Franklin 1, and the more recent salt water showing, was encountered below Franklin 1 production, but not as low as in Hussman 1.

Subsurface structural conditions supporting surface indications of the Moore pool resulted from a seismograph survey started in 1934 and completed early in 1935. Results of findings outlined a narrow high, extending south by southeast from the center of Section 21 and to the northwest from the same focal point. Both east and west from the anticline crest, the strata dip was abrupt. In view of the wells already drilled, geological opinion is divided as to whether the east dip of the structure is extremely sharp to define the anticline upon that side, or whether a fault parallels the structural high slightly east of the crest.

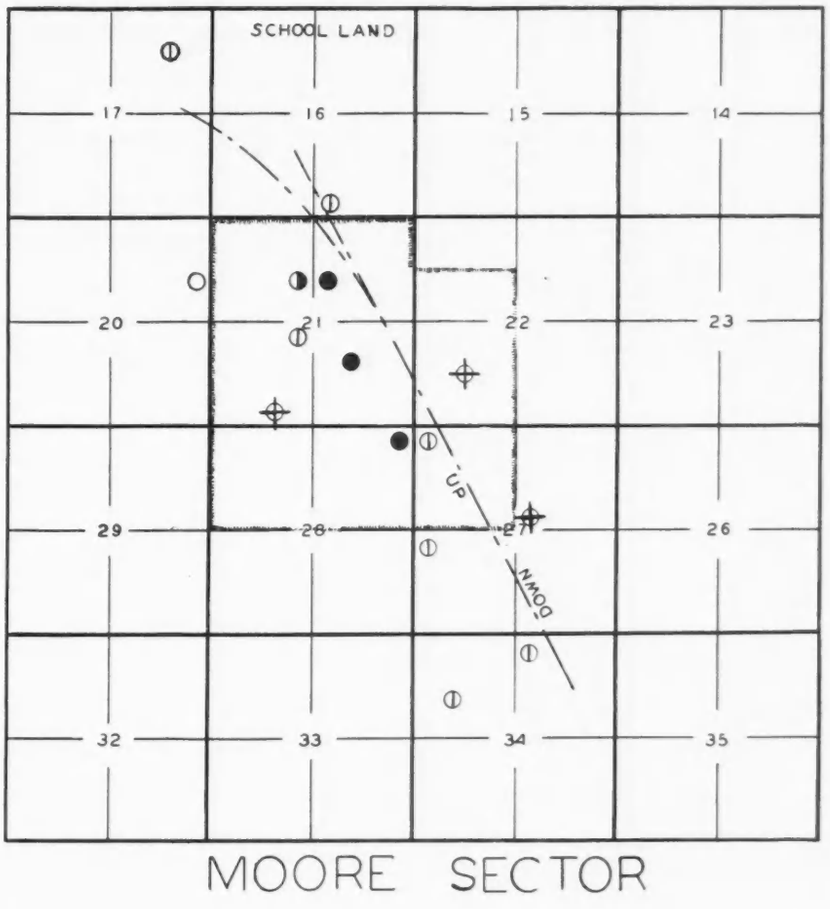
The first well drilled in the area, CSW 22, resulted in a dry hole at 4706 feet. This well was completed in 1930 and failed to go to a depth sufficient to be correlative with recent wells, although it is indicated to be east of the fault line. Also to the east of the fault, Asa L. Mayes et al's Fant 1, SW SW NE 27, was a dry hole at 7511 feet. In this test the base of the Pennsylvanian was cut at 6810 feet, and the Wilcox sand topped at 7501 without a show. This well ran 292 feet lower than Sinclair Prairie Oil Company's Franklin 1, SE NW SE 21-10n-2w, the discovery well a mile to the northwest and on the other side of the indicated fault line.

Hussman 1, SW SE SW 21-10n-2w, a dry hole to the west of the fault line, was drilled to 8025 feet, and ran 200 feet lower than Franklin 1. In this test, the base of the Pennsylvanian was penetrated at 6832 feet and the Wilcox sand was topped at 7465 feet. Some water was encountered at 7474 feet.

All tests of the area have found the first Wilcox sand to be very poorly represented, or absent, limiting production to the second sand.

Sinclair Prairie Oil Company's Franklin 1, completed in June, 1935, as the largest gas well in Oklahoma to open the Moore pool, was deepened 49 feet to 7318 feet in the Wilcox sand during the latter part of May of this year. On June 5 this well was tested for 3 hours to make 4244 barrels of oil against a back pressure of from 330 to 350 pounds. On July 2, Sinclair Prairie Oil Company's Rice 1, NEc 28-10-2w, was given a potential rating of 14,615 barrels following a 4-hour test. The depth of this well is 7312 feet in the Wilcox sand. Sinclair Prairie Oil Company's Marvel 1, NW SW NE 21-10-2w, on initial test through 9-inch casing with a back pressure of 850 pounds, produced 630 barrels of oil in 26 minutes. This well is at 7267 feet.

The area included in the shaded section of the map comprises the holdings of the community operators, and includes Mid-Continent Petroleum Corporation, Wiraaine Petroleum Company, F. M. Porther, Carter Oil Company, Empire Gas & Fuel Company, Standard Oil Company of Kansas, Continental Oil Company, Phillips Petroleum Company, Twin State Oil Company and Sinclair Prairie Oil Company. Sinclair Prairie Oil Company is doing the development within the communitized block.



MOORE SECTOR

The accompanying map shows the probable fault line, extended into the northwest as undefined. From the present drilling wells, indicated with cut circles, completed wells in black and dry holes shown as crossed circles, the productive area should be well delimited within the next 90 days.

Wildcat Interest

SOUTHEAST OKLAHOMA TESTS NOT AT CRITICAL STAGES

Tulsa—Wildcat operations in the southeast part of the state continue to claim the major share of interest. Although none is at a critical depth Carter Oil Company's James 1, SW NW SW 35-1s-8e, Coal County wildcat, is being closely followed. At 2855 feet this well topped the Viola lime and cored to find a small show of oil at the base of the formation. The Hunton lime also showed for stains, but was not encouraging. At 2899 feet the test turned into a fishing job for some lost drill pipe. This test is checking high when compared with structural conditions found in other adiacent wells.

Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Klabzuba 1, SW SE 35-11-5e, northwestern Seminole County, topped the Wilcox sand at 4621 feet and cored saturated pay between 4622 and 4628 feet. The operators shut in the test to erect tankage before testing. Nearest production is in the Keokuk pool to the east.

Phillips Petroleum Company's Eberle 1, NEc SW 12-5n-9e, south of Atwood in Hughes County found water in the first Wilcox at 5675 feet. Pipe was to have been run immediately and the well deepened to the second Wilcox sand pay.

Shell Petroleum Corporation's Illinois Bankers' Life Insurance Company 1, NW SE NE 10-2s-7e, eight miles west of Wapanucka in Johnston County, found sulphur water in weathered lime topped at 1120 feet. This wildcat is headed for the lower strata and is continuing below the water occurrence. A log of this well will be important in determining strata relationship below the Jesse fault line and will also bear a relationship to the geology being determined in Coal County tests to the northeast.

Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Pratt 1, SEc 29-19-5e, Payne County semi-wildcat that proved for a new second Wilcox sand pool a week ago, is exhausting water. On last test the production was 77 barrels of water with 193 barrels of oil, swabbing and flowing. Depth of the hole is 3802 feet, the second member of the Wilcox sand being topped at 3733 feet. Although wells and pools in this vicinity do not come in with impressive volumes, the production is steady and generally prolonged.

Four wells in the Fitts pool of Pontotoc County were given potential tests, with E. H. Moore's Atkins 2-A, NE NW NW 32-2n-7e, proving the biggest producer with a gauge of 4699 barrels of oil. Blackstock's Daniels 2, NW SE SW 21-2-7e, gauged 2600 barrels from the Bromide; Amerada Petroleum Corporation's Wooley 1, SE SE SE 21-2-7e, gauged 3159 barrels also from the Bromide, and Magnolia Petroleum Company's Burris 3-B, SE NE NE 28-2-7e, gauged 2898 barrels. It has become the practice in this field to treat the wells heavily with acid, a total gallonage of from 10,000 to 14,000 not being excessive. Carter Oil Company has located another test in the Fitts pool as an offset to the same operator's No. 11. The new location is for C. L. Richards 2, SE SW SE 30-2n-7e.

Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Zimmerman 1, SWc NE 10-12n-5e, which opened a new Hunton lime pool in southeast Lincoln County a week ago, is testing the formation. On one 24-hour test the well produced 320 barrels of oil and 212 barrels of water. Hole is bottomed at 4358 feet in Hunton lime. In southeast Lincoln County, Mid-Continent Petroleum Corporation's Hillman 1, SW SE NE 29-13n-6e, five miles southwest of Laffon pool, is waiting for cement to set before drilling ahead from 4383 feet, where 8-inch casing was set. In a core taken between 4435 and 4447 feet, an 11-foot recovery showed dolomitic sand with a light show of oil.

In Pottawatomie County, Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Goodman 2, NW NE 5-10-4e, in the Shawnee pool, proved a disappointment in entering the Wilcox sand. This deep test topped the second Wilcox at 5563 feet. A core obtained above 5573 feet showed no oil.

South Burbank pool of Osage County had an important completion in Lewis Production Company's Callahan 3, SEc SW 23-26-6e. This well is near the north edge of the pool and south of present activity in the east stringer of old Burbank. The Bartlesville sand was topped at 2864 feet and was drilled through at 2926 feet, showing 62 feet of sand. Hole is bottomed at 2928 feet, 2 feet beneath the pay. On first test the well made 192 barrels of oil in 24 hours, and after being shot with 120 quarts, production was increased to 785 barrels in 24 hours.

Due to lack of rain in Oklahoma in general, operators are conserving drilling water as much as possible. Although the situation is not acute at this time, early relief is hoped for. So far, only one well has ceased operations as a direct result of lack of drilling water.

Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Brunken 1, SWc NE 32-23n-4w, near Breckenridge in Garfield County, is penetrating strata that have not been tested in this part of the state. The test topped the Tyner green shale at 6170 feet and was still drilling this formation at 6295 feet. The Tyner shale is immediately above the Siliceous lime which is expected in the near future. Stanolind Oil & Gas Company's Johnson 1, NWc SE 20-18-4w, in the west Lovell pool of Logan County, recovered 2 feet of stained dolomite from a core taken between 6123 and 6133 feet. Operators were running casing.

Oklahoma scouts made a total of 47 first reports of the past week, a decrease of 8 reports over the preceding week. Pontotoc County led in starts with 11; Osage countered with 7, and Carter and Oklahoma Counties each reported 4 new locations. Hughes, Jackson, Kay, Marshall, Okfuskee and Pawnee Counties each reported 2 starts, and Comanche, Cotton, Creek, Jefferson, Johnston, Kiowa, Payne and Seminole made one start each.

A total of 54 wells were completed in Oklahoma during the past seven days, 45 being oil wells with a total initial production of 148,112 barrels, and two being completed as gassers for 54,250,000 cubic feet. Six wells were failures and one location was abandoned.

OKLAHOMA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CLEVELAND COUNTY—		
Sinclair Prairie et al, Rice 1, ne ne ne 28-10n-2w ....¶66½-14,615		7312
COMANCHE COUNTY—		
Ashcroft & Palmer, School Land 4, se ne se 20-2n-10w	3	905
School Land 5, se sw ne 20-2n-10w	3	972
COTTON COUNTY—		
Shasta Oil, Moore 7, se ne sw 2-2n-10w (pb 2195)	10	2205
CREEK COUNTY—		
Sinclair Prairie, Upton 2, ne nw ne 4-16n-12e (otd 1543)	25	2279
Magnolia, Street 11, ne sw ne 3-17n-8e	29	1409
Beverley Dev, Carman 1-A, se se ne 25-17n-8e	31	1464
Ice, Sandlin 1, cse ne 6-17n-10e....	4	2236
HUGHES COUNTY—		
Carter Oil, Hampton 7, se ne ne 1-9n-8e (pb 1720)	*	1731
Oklahoma Oil, Jackson 2, se se se 11-9n-8e	192	1859
Sinclair Prairie, Kirby 3, sw se ne 11-9n-8e	10	1828
JEFFERSON COUNTY—		
Circle Oil, Seay 32, ne sw se 3-7s-5w	14	1276
KAY COUNTY—		
Shell, Biddle 3, se ne sw 5-28n-1w (otd 2396)	425	2736
LOGAN COUNTY—		
Stanolind-Amerada, Pfeiffer 4, csl n½ sw 33-20n-2w ....¶3-3953		5070
OKFUSKEE COUNTY—		
Sinclair Prairie, Carolina 2, nw nw sw 31-10n-9e	240	1752
OKLAHOMA COUNTY—		
Anderson & Prichard, Proffitt 1, ne sw se 15-12n-3w (pb 6419)...¶11-1038		6475
Barnsdall, Edwards 2, sw se se 15-12n-3w ....¶25-19,525		6438
Champlin Ref., Robertson 1, se ne sw 15-12n-3w ....¶1-267		6490
Empire, Robestein 1, sw nw ne 22-12n-3w ....¶1½-353		6487
Phillips, Sawyer 7, sw ne ne 22-12n-3w ....¶11-12,127		6460
Sawyer 8, sw ne ne 22-12n-3w ....¶13-12,140		6462
Skelly et al, Hare 1, nw nw ne 22-12n-3w ....¶2-512		6488
Sunray & Hall, DeQuoin 1, sw nw se 22-12n-3w ....¶4-8023		6485
Barnsdall, Shade 1, nw nw nw 26-12n-3w ....¶28-18,565		6465
Phillips, Glenn Ellyn 1, ne nw nw 26-12n-3w ....¶33-12,102		6450
British-American, State 1, ne ne ne 27-12n-3w ....lcn.		abd.
Sunray, State Land 3, ne nw ne 27-12n-3w ....¶25-14,298		6517
Phillips, Stiles Community 2, ne ne ¾4-12n-3w 2899		6537
OKMULGEE COUNTY—		
Lease Investment, Fewell 1, sw sw se 33-15n-11e	*	2896
Aggis Drlg, McKinney 6-A, nw nw sw 16-15n-14e	5	850
Strogier, Pence 1, cnw sw 21-16n-11e ....¶1½		2140
OSAGE COUNTY—		
Elm Oil, 5, csl w½ e½ nw 17-20n-12e	11	1463
Ohio Osage Oil, 10, se nw nw 34-21n-9e	*	1134
Philtex Oil, 20, se nw nw 22-25n-12e (otd 1508)	½	1509
Bay Oil, Mohler 1, sw sw ne 23-26n-6e	50	2976
Norbla Oil et al, Baylis 1, se se sw 23-28n-5e	*	3975
PAWNEE COUNTY—		
Reynolds, Downing 3, sw nw se 24-20n-8e (pb 1116)	10	1128

Company, Well and Location	Init. Prod. Bbls.	Depth
PAYNE COUNTY—		
McCann et al, Dunkin 1-A, nw ne sw 30-18n-5e	*	1840
PONTOTOC COUNTY—		
Stahl, Dennis 3-B, sw se sw 21-2n-7e	¶4-5721	3580
Continental, Holkum 2, ne nw se 27-2n-7e	3615	4272
Crosbie, Burris 2-B, se se nw 27-2n-7e	¶3¼-5004	3596
Samidan Oil, Holkin 3-A, se sw ne 27-2n-7e	¶4-4788	3595
Skelly Oil, Park Collete 13, nw nw ne 28-2n-7e	¶3½-471	3742
Moore, Schauers 12, se ne nw 29-2n-7e	¶1½-1782	3749
Wirick 10-A, sw se sw 29-2n-7e	¶1½-3833	4451
Mary "F" Oil, White 3, cel sw se 16-5n-8e	*	970
POTTAWATOMIE COUNTY—		
El Bar, Wyatt 2, sw nw nw 10-7n-4e (otd 3803) (pb 3463)	15	4191
Atlantic, Milburn 1, ne nw nw 15-7n-4e (otd 3967) (pb 4189)	28	4191
SEMINOLE COUNTY—		
W. B. Pine, Cheparney 3, ne ne sw 12-5n-7e	799	4230
Winona Oil, Wolf 1, sw sw se 18-7n-8e	¶53¾	3085
Pioneer O&G, Wilson 1, se sw se 27-8n-8e (pb 4220)	95	4242
Deep Rock, Hagler 3, nw se ne 19-9n-7e	225	3513
Carter et al, Harris 1, cw½ nw ne 11-10n-6e	250	4187
STEPHENS COUNTY—		
Mudge Oil, Robertson 8, se sw sw 10-3s-5w	15	1496

*Failures; †Junked; ¶Million cu. ft. gas.

High Potential

CRESCENT PRODUCER EARNS 52,280 BARREL RATING

Oklahoma City.—Major interest in field development for the middle part of Oklahoma flashed back to the Crescent pool last week when a new high potential was recorded for Miller 2, owned by Gulf Oil Corporation and Carter Oil Company, SW NE SE 28-17n-4w. It is an old well which was carried to the second Wilcox sand, total depth 6324 feet. In 3 hours and 38 minutes it flowed 8108 barrels.

By that time all tanks were full and the potential could not be completed according to practice. Four hours of flow are taken and the potential is based on output of the last 3 hours. In the absence of any further attempt to take its potential, the well is being given a popular rating of 52,280 barrels for 24 hours.

Miller 2 is the second well to be carried deeper, and it offsets the other well, Continental Oil Company's McConnell 2, NW SE SE 28-17n-4w, which previously had been rated at 33,928 barrels on potential test.

The Crescent field is one of the smaller Wilcox producers of the central belt. It has 32 producing wells, whose potential for July is rated at 64,795 barrels, and a daily new allowable of 4187 barrels. The field was discovered in July, 1933, by Gulf Oil Corporation.

Concerns which hold the present producing leases are Amerada Petroleum Corporation, Carter Oil Company, Continental Oil Company, Eason Oil Company, Gulf Oil Corporation, Mid-Continent Petroleum Corporation, Sinclair Prairie Oil Company and The Texas Company.

North Extension Active

Drilling in the north extension of the Oklahoma City field kept its pace with a dozen completions, half of which had potential ratings in excess of 10,000 barrels. One location was abandoned.

Champlin Refining Company finally made a well of Robertson 1, SE NE SW 15-12n-3w, which was rated at 267 barrels daily with 1,000,000 cubic feet of gas, total depth 6490 feet. This well is at the north end of the extension and is looked upon as marking the extent of production in that direction.

The end of the week found drillers going ahead cautiously in six wells along the east side of the extension. They are in the area where the Wilcox sand is missing and the hope of production lies in the formation known as the School Land zone, where other wells are producing with gas lift.

Unless legal barriers are lifted in the area between the extension and the older part of the field, the drilling campaign will dwindle steadily for the north extension.

So far as the trial court is concerned, drilling may proceed in Howes Capital addition as the district court last week denied an injunction plea to halt development there. The judge held that plat restrictions did not forbid the drilling of oil wells. The ruling applied only to the block where a permit had been denied by the city.

The question of drilling in the Lincoln Terrace addition will not be answered until August 24, when an injunction pleading will be heard. Restrictions are considered stronger for this addition.

The State School Land commission advertised for bids a second time on lands surrounding the medical school and hospital. Royalty of one-eighth is asked in the second effort. Previously one fourth royalty was asked and the one bid entered was rejected.

It is in this area of public lands and

Oil Below Lime

GREER COUNTY TEST MAKES 25 BARRELS LIGHT OIL

Ardmore.—John W. Hooser's Rice 1, SE NW NE 25-7n-21w, a wildcat location 8 miles north of the Granite pool of Greer County, furnished the only break in routine drilling in southwest Oklahoma. Pay was hit at 1140 feet, beneath limestone, the well making 25 barrels of high gravity oil in initial test. Higher in the hole, operators penetrated lime that carried a good show of oil at 940 feet.

Wildcats of interest in this area have not developed for interesting shows. Sinclair Prairie Oil Company's Stockton 1, SE SE SW 26-6s-2w, in Love County, which has been shut down, is to be in operation shortly. Operators have received the expected 5-inch drill pipe ordered some time ago. In the same county, Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Westheimer 1, SW SE SW 27-6s-2e, on last test made 27 barrels of oil and 6 barrels of water. The proportion of water to oil is being lowered in this well, but the oil volume is dropping slightly as the water is decreasing.

In south Carter County, Carter Oil Company's Walker-Voorhees 1, CSE SW 34-5s-2w, is drilling in shale below 7342 feet. Some slight shows have been encountered in this well but have not been tested. The same company's Davidson 1, a deep test southeast of Sayre in Beckham County is drilling below 5570 feet without oil shows.

In Garvin County, near Riddle et al's Tussy 1, extreme northwest Carter County test that opened a new pool north of Scholem Alechem, Winkler & McQueen, Inc.'s Davis 1, SEc 32-1n-3w, is drilling below 1200 feet with the first markers near. This test is scheduled for 3000 feet if no commercial production is encountered above this depth. Tussy 1, producing from two formations at 2918 feet and 3023 feet, was estimated at 80 barrels of oil per day.

Gulf Oil Corporation's Wearmouth 1, SE NE SE 31-1s-18w, northwest of Frederick, in Tillman County, which developed a fishing job at 5127 feet for 595 feet of drill pipe made a partial recovery. The same company's McWilliams 1, NW SW SW 15-3s-17w, also in Tillman County is drilling shale below 4812 feet. Gulf Oil Corporation's Burrow 1, NEc NW 6-1s-19w, southeast of the Tipton pool of Jackson County, is an edge well. Burrow 1 produced 65 barrels initial from the Cisco series at a total depth of 2633 feet.

McElreath and Suggett's Lassater 1, SE SE SW 2-2n-1w, Garvin County wildcat that is being closely followed, cored streaks of dense sand between 4770 and 4776 feet. Another core taken between 4776 and 4808 feet showed deal oil. At latest reports the test was drilling at 4812 feet.

PETITION CHANGE

Tulsa.—Skelly Oil Company petitioned the Oklahoma Corporation Commission July 7 to change the rating of the Hunton wells in the Fitts area from Class D to Class C for proration. It was further asked that a minimum allowable of 75 barrels of oil per well per day be fixed.

finer homes that possible enlargement of the drilling belt lies. Indications are that home owners are bent on carrying their protest to the higher courts. Final victory for lease seekers may come at a time when well pressure is so low that drilling will not be attractive.

Down in the Moore pool, Cleveland County, water was found at the bottom of the Wilcox sand in a well to give evidence that this pool will be narrow. This turn was anticipated, as previous drilling as well as geophysical studies had indicated a structure of this type.

Operations Drop

NEW POOL, TWO EXTENSIONS RECORDED DURING WEEK

WEEKLY STAFF REPORT

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
Magnolia, Steckel 8, nw sw ne 1-20s-11w	1164	3299
BUTLER COUNTY—		
General Pet, Heorman 1, sw sw sw 20-26s-3e	*	2901
Flint Hills O&G, Martin 13, ne se ne 27-28s-4e	¶¼	1471
Estes et al, Edgar 1, nw nw se 1-28s-8e	*	1030
COWLEY COUNTY—		
Craft et al, Taylor 1, ne se nw 32-32s-3e	lcn.	abd.
Watchorn O&G, Lowe 3, se se se 6-35s-3e	15	3550
ELLIS COUNTY—		
Trigg et al, Armbrister 1, se se sw 6-11s-19w	*	3770
Phillips et al, Bertha 1, cw½ w½ se 5-12s-17w	168	3656
Wolf Creek Oil, Walter 1, se sw se 14-13s-17w	*	3705
Palmer et al, Ruder 1, sw nw se 8-15s-18w	1024	3597
ELLSWORTH COUNTY—		
Carter et al, Groth 3, csw 23-17s-9w	1365	3187
Fred Jones et al, Byers 1, sw sw nw 18-17s-10w	970	3311
KINGMAN COUNTY—		
Oklahoma Oil Corp et al, Reeves 1, nw nw nw 29-27s-5w	*	4317
Lauck et al, Prather 1, cse 18-27s-8w	*	4535
McPHERSON COUNTY—		
McBride, Whitewright 5, cn½ n½ sw 30-19s-1w	248	2975
Derby Oil, Hetzke 1, se se se 20-21s-1w	1947	3309
Continental et al, Wenger 2, nw sw 13-18s-8w	*	3268
RICE COUNTY—		
Continental, Nickel 2, nw nw sw ne 32-21s-1w	1081	3342
Continental et al, Lansing "B" 4, nw ne se 25-18s-8w	755	3148
Root 1, nw ne ne 36-18s-8w (otd 3181)	1839	3230
Hinkle et al, Mehl 2, nw ne sw 27-18s-10w	271	3204
Shell et al, Hoferman 1, cn½ n½ se 6-19s-9w	1719	3216
Lebow et al, Callis 3, nw nw se 16-19s-9w	1896	3213
Hutchinson Oil, Wendell 6, sw nw ne 32-19s-10w	1831	3318
Stanolind, Mitchell 6, nw nw sw 32-19s-10w	2052	3300
Gulf Oil, Cross 1, nw sw ne 15-20s-9w	1037	3237
ROOKS COUNTY—		
Murfin et al, Westhusin 1, ne ne se 19-9s-16w	*	3620
RUSH COUNTY—		
Interstate Prod, Schmidt 1, sec 9-18s-16w	¶6	3559
RUSSELL COUNTY—		
Phillips, Winctur 1, sw sw se 19-13s-14w (otd 3018)	206	3259
Hartman & Blair, McAllister 1, sw sw se 24-13s-15w	*	3342
Bridgeport Machine, Witt 2, ne nw sw 3-14s-15w	582	3110
Crown Pet, Mills 2, ne ne nw 10-14s-15w	lcn.	abd.

Wichita.—Operations in Kansas have dropped to a level not equalled since the cold weather of last spring. One new pool and two extensions to important production areas were the week's highlights. Silica pool of Rice County was bounded to the northeast by Stanolind Oil & Gas Company's Bowman 1, SW NW 22-19-10w, which showed a week ago for a producer from the Siliceous at 3298 feet. Originally showing 34 barrels on swab over eight hours, the well turned to water. Operators may plug back to complete as a small producer.

Empire Oil & Refining Company's Adam Ebel 1, SWc 24-14-14w, a wildcat southeast of the Gurney pool of Russell County, opened a Gorham sand pool from 3260 feet. The sand was topped at 3188 feet and drilled to 3258 feet. After deepening to 3273 feet in the same formation the test swabbed 150 barrels in 13 hours. A later test showed 129 barrels. This location is an offset to three Oswald lime producers at the southeast edge of Gurney pool. The Oswald lime was logged in this well at 2932 feet and tested for 207 barrels oil with 279 barrels of water.

Graber pool of southeastern McPherson County received two important extensions. Dickey Oil Company's Goering 1, SE 17-21-1w, a mile north of present development, drilled the Hunton lime from 3299 feet to 3322 feet. Oil rose 1500 feet in the hole in the first hour. The top of the Hunton, being encountered at 3299 feet, places this well 15 feet higher on the structure than the producers a mile to the south. In the next section south, Continental Oil Company, Gulf Oil Corporation and Marathon Oil Company's Hetzke 1-A, SE SW SE 20-21-1w, an inside location between Goering 1 and the major pool, proved for 1635 barrels of oil from the Hunton lime at 3310 feet.

Rose Spring Drilling Company's Rick 1, SW SW 1-19s-11w, south of the Straub pool of east Barton County, which indicated a strike two weeks ago, topped the dolomite at 3321 feet where 7-inch casing was cemented. When the plug was drilled the well filled 1000 feet with oil in 5 hours from 3355 feet. Gravity of the oil was 39 degrees.

In Rice County, the two wildcat tests that found large gas production southeast of Lyons, are at a standstill. Shell Petroleum Corporation's Maughlin 1, NE NW SE 11-20-8w, is inactive after treating with 1000 gallons of acid to release a fish. Simpson Oil Company's Wiggins 1, CSL N½ NE 35-19-8w, the other gasser of the area, has been deepened only a few feet since killing the gas. An electrical logging device showed no water in the hole.

Hauschild pool of southeast Rice County appears to have been extended ¼-mile east by Derby Oil Company and McPherson Drilling Company's Yaple 1, SW SE SE 10-21-7w. When drilled into the conglomerate at 3381 feet, oil started flowing out of the casing. No test of the well can be made until pipe line connections are completed, although it should be good for more than 6000 barrels. Mid-Continent Petroleum Corporation's Risse 4, NE SE NE 6-20-10w, in the Raymond pool of Rice County, is drilling in the Siliceous at 3297 feet. Twenty-five hundred feet of oil is standing in the hole to indicate an early completion. Hartman and Blair's Schartz 1, NE SE SE 33-19-10w, east of the Silica pool of the same county, has recemented a caving hole and is waiting for the cement to set before drilling deeper.

Another big producer has been counted for the Bemis pool of northeastern Ellis County. Margay Oil Company's Bemis 5, SWc SE 16-11-17w, topped the Siliceous at 3340 and drilled to 3363 feet. From this depth the well filled 3000 feet with oil. This well is a diagonal offset to the discovery well of the pool. Winkler, Koch and Uscan's Hadley 1, which completed for 2037 barrels.

Vickers Petroleum Company's Hutton 1, NE SE 29-8-22w, the only drilling wildcat in Graham County has been abandoned at 3875 feet in the Siliceous lime. At this depth, operators had a showing of water.

Company, Well and Location	Init. Prod. Bbls.	Depth
Hartman & Blair, Harbaugh 2, se ne sw 25-14s-15w	740	3150
SEDGWICK COUNTY—		
Stanolind, Heyen "B" 4, ne se ne 31-22s-11w	1372	3564
SUMNER COUNTY—		
Stelbar Oil, Erker 5, sw sw nw 33-31s-1w	642	3685
Carpenter et al, Reece 1, ne ne ne 14-32s-2e	614	3100
TREGO COUNTY—		
Watchorn & McNeeley, Hamilton 1, csw se 14-11s-23w	385	3587
Continental, Holcomb "A" 1, cw½ w½ ne 26-11s-23w	495	3681
Worsley, Puriton 1, sw sw sw 32-13s-25w	lcn.	abd.
WOODSON COUNTY—		
Schwartz et al, Jones 1-A, sw se nw 30-23s-14e	30	1713
Woodson Oil, Rhea 9, cs½ 13-24s-13e	*	1663

*Failures; †Junked; ¶Million cu. ft. gas.

Another pool was indicated for Russell County when Lario Oil & Gas Company's Steinert 1, NE NE 21-15s-15w, a wildcat test in the southwest corner of the county, bailed 19 barrels of oil from Oswald lime at 3071 feet. The Oswald was topped at 3060 feet. A small show of water was indicated by the bailer test made July 17.

Another test, Empire Oil & Refining Company's Cunningham 1, SE SE 26-18-1w, McPherson County semi-wildcat northeast of the Ritz-Canton pool, proved the new area for greater production than was at first indicated. On a potential test, July 16, the well produced 825 barrels of oil.

Low Gravity Hit

HOPKINS COUNTY WILDCAT WILL PUMP 500 BARRELS

WEEKLY STAFF REPORT

Tyler, Texas. — Pumping equipment will be installed on D. S. Hager, W. P. Luse and Russ Petroleum Company's J. E. Worsham 1, first producer in Hopkins County and the forerunner of a second low gravity oil field for Northeast Texas from the Paluxy sand member of the upper Trinity series, after prolonged swabbing tests failed to convert the well into a flowing producer. Based on crude yield by swabbing, the well is expected to make a 500-barrel pumper, as the column of oil rises to the surface shortly after being swabbed down. The oil tests 27.9 gravity at 98 degrees temperature, and is void of formation water. This wildcat, which is located near the center of the east line of the A. O. Wetmore Survey, about 2½ miles south of Sulphur Bluff, is producing from Paluxy sand at 4467-4500 feet. It is about 16 miles west by south of the Talco field, which is also producing from the Paluxy.

Absence of flowing pressure in the Sulphur Bluff area's first oil strike will tend to retard development. Owners of the well have made no plans to continue exploration work. R. T. Sullins, Terrell, Texas, has been granted permit to drill four locations on the H. W. Wilson 8½-acre lease, A. O. Wetmore Survey, but no development work has been authorized, according to reports.

Considerable attention was focused on Pure Oil Company's W. H. Faulkner 1, southeastern Rusk County wildcat on the Mount Enterprise faulted prospect, on the strength of continued evidence of gas and oil saturation in cores recovered from Travis Peak section of the Basal Trinity while coring below 7400 feet. A core taken at 7535 feet showed sandy-shale formation. Top of Travis Peak was logged at 7323 feet, with an elevation of 563 feet, and a drill stem test at 7471-7488 feet yielded mud with a little gas in evidence. The upper section of the Trinity failed to produce oil or gas, but salt water appeared when a formation tester was used at 6177-6298 feet.

Gulf Oil Corporation's Mary J. Ross 1, located south of the Camp Hill field, Anderson County, credited with having entered the upper section of the Trinity near the 6500-foot level, and shutdown at 6675 feet to install heavier equipment, according to reports. Top of Georgetown lime was logged at 5452 feet, or 4965 feet sub-sea. In the Cavuga field, northwestern Anderson County, Tide Water Oil Company and Seaboard Oil Corporation's J. N. Edens 15, second deep test for the partnership, was drilling in lime at 5470 feet. First Georgetown lime was encountered at 4619 feet, or 4306 feet below sea level.

In northeastern Kaufman County, Colton, Lester et al's J. C. Barrow 1, J. D. Taylor Survey, logged red beds in the lower Woodbine in drilling to 4360 feet. Owners are seeking production in the Trinity, and are contracted to drill to 6000 feet. Location is on the Mexia-Talco fault trend, but the test has not cut through the fault plane to the upthrow side.

Location for Penn Oil Corporation and Fox Wood's projected 6500-foot test in southeastern Hunt County, five miles north of Lone Oak, has been assigned to the northwest corner of the A. B. Manning 57½-acre tract, Sally Owens Survey. It is near the center of a 5000-acre block recently acquired by the above Oklahoma City operators.

CASES POSTPONED

Increases in Oklahoma's proration orders delayed

Oklahoma City. — Possible increases in proration orders for Oklahoma in July failed to materialize when petitioners withdrew their cases before the corporation commission by asking the cases be postponed until July 29, when orders will be written for August. Petition of British American Oil Producing Company to increase the state allowable to 569,800 barrels daily, the recommendation of the United States Bureau of Mines, was set for July 14. Petition of Indian Territory Illuminating Oil Company, which sought removal of output restrictions on Simpson zone wells of the Oklahoma City field had been set for July 15.

Advance information from Washington is that the Bureau of Mines recommendation for Oklahoma in August will be 575,500 barrels daily. While nothing official has been released, indications are that the Oklahoma conservation body will increase the allowable order for the state, which stands at 526,175 barrels daily for July.

Since Oklahoma along with other states pushed output for the middle of the month well above the figure of its own conservation body, it is likely that the end of the month will bring a concerted effort to keep the allowable down, so far as an order is concerned in the hope that actual production will be under the recommendation of the bureau of mines.

Kansas is the only Mid-Continent state that seems able to hold its output close to its state order. The federal recommendation for Kansas in July is 164,200 barrels daily. Actual output sticks between 140,000 and 150,000 barrels daily.

Oklahoma fields persist in an output of around 545,000 barrels daily for three weeks of each month, then curtail for a week to around 510,000 barrels daily. The average is well below the federal recommendation.

RAINS HALT TESTS

San Antonio, Texas—Continued rains throughout South Texas have materially affected drilling operations in wildcat territory. Many tests which have been attempting to move into locations for weeks are still idle, awaiting favorable weather conditions. In several cases, it has been necessary to spud in with light equipment to fulfill lease obligations in anticipation of continuing when rigs can be moved in.

PRESSURE DECLINE

East Texas shows drop of only 2.23 pounds

Tyler, Texas. — Reservoir pressure decline in the East Texas field was held to 2.23 pounds during the month ending July 12, according to regular survey of 34 key wells by engineers of the Texas Railroad Commission. During the previous month average pressure dropped from 1190.02 pounds to 1182.44 pounds, or a decline of 7.58 pounds. In view of this sharp recession in bottom hole pressure the commission lowered the proration quota of the field 12,854 barrels to 427,371 barrels daily, effective June 21. This cut in the allowable is credited with having materially aided in preventing a repetition of the heavy loss in pressure recorded on June 12.

Allowable production increased to 431,153 barrels daily on July 14, with 166 wells added to the schedule since June 21. Continuation of this rate of new completions will restore the output of the field to the same level reached prior to the June 21 reduction within about two months. The commission will not alter the proration schedule in this field when new state allowable is prepared for the August 1-31 period, and if a lower proration factor is assigned East Texas some months hence, the reduction will be comparatively small as the average allowable per well is less than one

barrel above the 20-barrels given marginal wells in this depth class.

Average yield per well in East Texas has increased from 20.56 barrels daily on June 21 to 20.58 barrels daily by reason of higher potential ratings given a number of wells. A portion of this gain was derived through the inclusion of Humble Oil & Refining Company's S. A. Plowman 46-A, near SWc of 228½-acre lease, F. Cordova Survey, mid-section of the Joiner area, Rusk County, as a key well on the commission's potential schedule. Plowman 46-A was completed July 7 from sand at 3680-3728 feet flowing at the rate of 60 barrels oil per hour through 11/16-inch choke on 2½-inch tubing at 3626 feet, or 16 feet above the 7-inch casing seat. Five days later on official potential test this well gauged 1802.57 barrels in two hours, and was assigned a potential of 901 barrels per hour. Prior to the test, pressures on tubing and casing were 160 pounds and 234 pounds, respectively, and during the test the former dropped to 10 pounds and casing pressure averaged 31 pounds. After the well was closed in the tubing pressure built up to 190 pounds, and a gauge on the casing recorded 195 pounds. Humble Oil & Refining Company has consistently been the most successful in developing the largest potentials from key wells used by the commission in apportioning production among non-marginal wells.

Current field activity reports reveal 102 rigs in operation ,with 55 additional tests idle.

POLUTION RULING

Austin, Texas.—The Texas Supreme Court has ruled that in cases of polution by oil companies, negligence must be proven before damages may be collected.

This rule was handed down last week in case styled Annie Lee Turner vs. Big Lake Oil Company.

Suit was brought for damage resulting from salt water which escaped from company ponds, and the court held that the litigant "must allege and prove some specific act of neglect or must allege and prove that the water polluted was a water course."

"In England (where common law originated) there are no oil wells, no necessity for using surface storage facilities for impounding and evaporating salt water therefrom. In Texas, the situation is different. Texas has many great oil fields, tens of thousands of wells in almost every part of the state. Producing oil is one of our major industries. One of the by-products of oil production is salt water which must be disposed without injury to property or pollution of streams. The construction of basins or ponds is a necessary part of the oil business. In Texas, much of our land was granted without mineral reservation to the state, and where minerals were reserved, provision has usually been made for leasing and operating. It follows that as to these grants and leases the right to mine in the usual and appropriate way, as, for instance, by the construction and maintenance of salt water pools . . . that being a use incident and necessary to the right to produce oil."

EAST TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
D. K. Caldwell Oil Corp., B. Fox-State 1 (8.2-ac)	7000	3726
J. E. Farrell & Co., Hammett 7 (100-ac)	1200	3672
W. H. Gant-Garvin & Wegener, W. P. Moore 36 (134.24-ac)	1000	3577
Gulf Oil Corp., Mayfield 12-C (103.28-ac)	6000	3627
Humble, S. A. Plowman 46-A (228½-ac)	12,000	3728
Harry Hanbury et al, Sharp-Marathon 7 (112.32-ac)	900	3690
J. H. V. Oil Co.-C. A. Davis, J. H. Propes 1 (1¼-ac)	50	3585
M. H. & Jim McMurrey, H. C. Dickerson 2-B (39.51-ac)	100	3625
R. J. McMurrey et al, H. Robinson 12 (145.8-ac)	2500	3790
Overton Ref. Co. (was J. B. Sneed), Rollins 3-B (34.03-ac)	800	3662
Pet. Marketing Corp., C. L. Graham 3-D (80-ac)	1200	3688
Stanolind, H. C. Maxwell 24-A (107½-ac)	5500	3784
Stanolind-Pure, R. J. Burton 18 (154.67-ac)	1500	3651
Sun, J. D. Henson 26 (216½-ac)	2500	3653
Tide Water, J. E. Thrash 4 (16.82-ac)	4500	3738
KILGORE AREA—		
Arcadia Ref. Co., E. Sample 1 (101.66-ac)	3600	3744
Arkansas F. O. Co., C. Brown 14 (100-ac)	9400	3601
J. Beren et al, M. Kennedy 7 (20-ac)	600	3657
Burma Oil Co., W. L. Pentecost 2 (25-ac)	100	3475
Bowles Oil Co., D. Wells 19 (100-ac)	180	3700
Empire O&R Co., O. Lockhart 12 (75.11-ac)	4500	3528
Humble, J. N. Peterson 39 (222.1-ac)	7300	3720
Iowa Payne Oil Co., W. B. Walker 6-A (42.33-ac)	750	3668
McAlister Fuel Co., Sabine River 7-O, Tr. 7 (56-ac)	9000	3490
Magnolia, O. R. Hilburn 5 (34.79-ac)	6800	3720
Marcus Oil Co., J. C. Clayborn 9 (46.34-ac)	3500	3682
O. K. Producers Corp. (Mike Lisle), G. Benson 1 (3-ac)	360	3662
Shell, J. B. Watson 55 (385.2-ac)	8000	3742
V. J. Sladek Prod. Corp., R. A. Motley 2 (37½-ac)	300	3753
The Texas Co., S. B. Walker 20 (213-ac)	800	3590
S. B. Walker 21 (213-ac)	480	3597
LONGVIEW AREA—		
Atlantic O.P. Co.-J. K. Wadley, M. Turner 27 (159.28-ac)	10,000	3622
Guardian Oil Co., J. M. Farrell 1 (20.81-ac)	*	3650
Magnolia, H. Hampton 20 (153.33-ac)	8500	3650
Mayhughben Co.-Creslenn Corp., E. O. Widener 6 (98-ac)	120	3738
Petroleum Corp. of Ven., I. Walker 14 (122-ac)	500	3650
B. H. Rogers & Bros., J. Evers 2 (44.11-ac)	80	3841
Stanolind, Cox-Hamon 10 (72.68-ac)	8200	3540
Stuckey-Thrasher 18-B (80-ac)	7000	3608
Sun Oil Co., E. O'Byrne 15 (316.8-ac)	750	3693
Superior Oil Co. (Cal.), Ingram 21 (163.84-ac)	10,000	3580
Tide Water, J. J. Castleberry 21 (202-ac)	1000	3600
Tide Water-Stanolind, A. J. Tuttle 15 (95.8-ac)	7000	3546
United E&W Oil Co., W. F. Smith 3 (25-ac)	*	3701
W. F. Smith 2-B	*	3618
Wardell Oil Co., Willie Starr 3 (11.12-ac)	900	3586
ANDERSON COUNTY, (Cayuga Field)—		
Roeser-Pendleton, Inc., L. R. Billett 4-B (918-ac)	1500	4038
FRANKLIN COUNTY, (Talco Field)—		
J. B. Bond & J. Z. Werby, T. J. Sanders 2, (42.3-ac)	*	4344
Humble O&R Co., A. P. King-Hughes 2 (1053.36-ac)	1500	4238
TITUS COUNTY, (Talco Field)—		
Horne Oil Co., J. F. & L. Barton 1 (3-ac)	750	4338
Humble O&R Co.-Ned B. Morris, Jr., W. H. Hughes 1 (6½-ac)	750	4351
W. P. Luse et al, W. T. Sullivan 1-A (4-ac)	1000	4349
Red Iron Drl. Co.-Dean Bros. & Adkisson, A. Cornelius 1 (3-ac)	400	4350
G. Stratton et al, J. F. Barton 1 (1-ac)	720	4350
Sutton-Hawkins & Nivla Oil Corp., W. H. Gray 1 (2.1-ac)	720	4345
Stroube & Stroube, S. E. Stratton 1 (50-ac)	*	4510
VAN ZANDT COUNTY, (Van Field)—		
Humble, E. E. Carroll 9 (98-ac)	2500	2834
FANNIN COUNTY—		
B. F. Allen et al, Bernice Argo 1 (16½-ac)	*	2500
FREESTONE COUNTY—		
Tom Sharp & Paul Gunther, E. E. Lamb 1 (95-ac)	*	3503
KAUFMAN COUNTY—		
Garvin Germany et al, D. Clark-Kirby 1 (6-ac)	*	1780

*Failures; †Junked; ¶Million cu. ft. gas.

NEW GAS RESERVE
Houston County wildcat makes area important

Palestine, Texas.—Completion of Ellison, McBride et al's J. E. Bean 1, record depth Woodbine sand producer and the first from this horizon in Houston County, with a rated flow of 50,000,000 cubic feet of high pressure gas and approximately 10 barrels of clear distillate per hour establishes a fourth important natural gas reserve for the south portion of the East Texas Woodbine sand belt. The potential yield of high pressure sweet gas production from the Long Lake and Cayuga fields, which center upon Anderson County, but which extend into three counties; the Buffalo gas field, Leon County; and Houston County's first strike enables the district to rank among the foremost sources of desireable fuel in the southwest.

Oil Outlook Good

Presence of distillate in Houston County's deep producer lends encouragement for later development of oil production at a deeper level in the Woodbine, or else on nearby tracts. This new strike is producing from sand at 6035-6037 feet, with an elevation of 482 feet, and kicked off early last week through small choke before heavy rotary mud was swabbed from the hole. Flow of gas through ½-inch choke on 2-inch tubing at 6020 feet was rated at 23,500,000 cubic feet daily, with about ½-barrel of distillate per hour. The well registered 2200 pounds pressure on tubing and 2000 pounds pressure on the 7-inch casing when closed in. It is located at the center of the northwest 40-acres of 160-acre tract, Eli Steadman Survey, about 1½ miles northwest of Grapeland, and about 15 miles south of the Camp Hill field, Anderson County, which produces from Sub-Clarksville and Woodbine Sands. Haberle and Thornton, drilling contractors, own an interest in the well and acreage that was donated by Empire Oil & Refining Company in order to get a test drilled within its lease block.

In Northwestern Houston County, Walter L. Goldston, Houston, et al's B. W. Burns 1, near the center of the west 20-acres of a 50-acre tract, Juan de la Reviere Survey, A-49, was drilling below 2800 feet, with an elevation of 255 feet. Humble Oil & Refining Company donated acreage in order to get a Woodbine sand test drilled within its block.

PALUXY ERRATIC

Talco operators expected to explore lower Trinity

Mount Pleasant, Texas. — Erratic performance of test wells on the Talco structure will hasten the exploration of the lower section of the Trinity horizon. The Paluxy sand section of the upper Trinity does not run true to form, and several "inside" tests occupying favorable structural positions have failed to produce because of barren shale and shaley-lime formation deposited at the same levels that nearby wells encountered heavily saturated oil sand. Operators place considerable confidence in the prospects of more attractive production being found in the Glen Rose series and Basal Trinity, and a movement was on foot last week to finance the drilling of a test to these horizons.

Porter Brothers et al's W. T. Sullivan 1, NEc of four-acre lease, I. P. Stern Survey, and about one-half mile south of the discovery well, has been nominated to explore the lower sands after proving void of oil or water on drill stem test in Paluxy at 4030-4352 feet. An electrical formation surveying instrument failed to register porosity in the Paluxy when the tool was lowered to 4337 feet. The hole is bottomed at 3982 feet below sea level, and probably more than 30 feet above the water table. Operations have been halted, pending outcome of projected plans to deepen.

Plugging orders were issued last week for Stroube & Stroube's S. E. Stratton 1, NEc of a 50-acre lease, MEP&P Ry. Survey, situated several miles east of nearest production at Talco, after encountering water sand in Paluxy at 4498-4510 feet. The hole is bottomed at 4169 feet below sea level. A small amount of free oil appeared with drilling mud when the formation tester was used at 4280-4326 feet.

Prospective west extensions for the field were holding attention towards the end of the week. Lawrence S. Flannery and Stroube's J. L. Hedrick 1, NEc of 66.08-acre lease, MEP&P Ry. Survey, A-344, Franklin County, situated several miles from production, failed to log any appreciable oil saturation in coring Paluxy section at 4242-4316 feet. At the latter depth the test was about 3945 feet below sea level. Top of Georgetown lime was logged at 3455 feet. Humble Oil & Refining Company's P. J. Dawson 1, SEc of an 80.45-acre lease, B. H. Epperson Survey, a north offset to the above outpost, was drilling below 3300 feet, with an elevation of 372 feet. Joe DeGrazier et al's F. M. Batts 1, NEc of a 30-acre lease, F. M. Batts Survey, A-688, located about ⅝ of a mile west of a prospective pumper in Franklin County, logged first Georgetown lime at 3504 feet, or 3148 feet sub-sea, and was drilling below 3900 feet.

On the south edge of Talco townsite, Horne Oil Company's Barton 1, near center of a 3-acre lease, gauged 33 barrels per hour through open tubing on a potential test from Paluxy at 4152-4338 feet, with an elevation of 361 feet. The oil tested 24.7 gravity at 103 degrees temperature. Talco Pipe Line Company, only buyer in the field, made pipe line connection July 14, and is running the current allowable of 124 barrels daily.

TALCO SPACING

Paris, Texas.—The well spacing program for Talco field was taken under advisement by the Texas Railroad Commission at the conclusion of a hearing held here July 15 after witnesses presented by independents and majors offered conflicting views as to the acreage drainage area to be allotted each well. The field has been in process of development since mid-March, and has 22 producers, but permanent rules governing development have been deferred by the commission in response to requests made by independents.

Independents petitioned the commission to issue a well spacing order that would permit the drilling of one well to each 10-acre unit. Spokesmen for the majors contended that the Paluxy sand zone should not have a density greater than one well to 20 acres.

Senator Tom DeBerry of Bogota, who represents a group of independents requested that no restrictions be placed upon operations in the field.

Records of the commission reveal that more than 450 permits have been approved for Talco, and 104 are within the townsite of Talco on sites averaging less than one acre in area, besides six permits that have been granted for the drilling of tests on many sites averaging less than 10 acres outside the townsite.

MAG BARBECUE

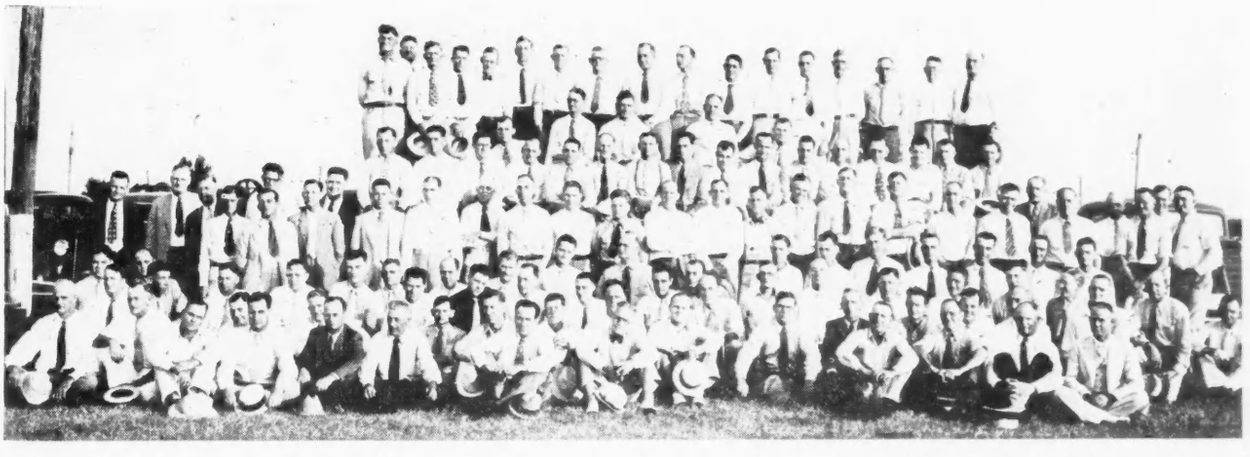
10-year service buttons given to 87 employees

Luling, Texas. — Annual barbecue staged by employees of the Magnolia Petroleum Company here July 14 commemorated the tenth anniversary of the company's acquisition of the bulk of the producing properties in the Luling field, and provided suitable occasion for the awarding of 10-year service buttons to 87 workmen in the production department. These men were taken into the organization when the company purchased United North and South Oil Company's holdings in 1926. C. G. Worthy, field superintendent at Luling, presided.

Presentation of the service pins was made by Joseph Kilchenstein, superintendent of the Texas-New Mexico division, with headquarters at Dallas. Two employees of the company's Luling refinery were given service pins by E. E. Swope, general manager of refineries, Beaumont, and J. L. (Slats) Latimer, general superintendent of the Texas-Louisiana-Arkansas division of Magnolia Pipe Line Company, rewarded two ten-year men in his department with engraved pins. M. J. Norrell, manager of the industrial relations department, Dallas, made a short talk.

Edgar B. Davis, former head of the United North & South Oil Company and discoverer of the Luling field, was a guest speaker.

More than half the gasoline service stations in the United States sell less than 5000 gallons a month.



Included in this group of Magnolia Petroleum Company employes at Luling, Texas, are 87 men who have been on the job since the present owners bought into the field 10 years ago.

POTENTIALS BOOSTED

Three West Texas areas benefited by large wells

WEEKLY STAFF REPORT

Midland, Texas.—Potential production of three areas in West Texas was given a substantial boost late last week through the completion of four big wells.

The Henderson reef type structure in Winkler County added its fifth big well when Atlantic Oil Producing Company and W. A. Lemaier Petroleum Corporation's Fred Leck 1-B, NWc NW Section 3, Block 26, gauged 2307 barrels of pipe line oil in 24 hours, flowing through 2½-inch tubing from Dolomite lime at 3010-3075 feet.

The big wells embrace an area about 1½ miles in length and ½ mile in width, with prospects of important extensions appearing later to the south towards the Hendrick field and a short distance to the west. All wells are prorated to 100 barrels daily.

Waddell field, northern Crane County, added two more prolific wells with the aid of acid in the comparatively thin section of lime pay. Tide Water Oil Company's Edwards 1, SWc NW Section 2, Block B-23, extended production several locations to the north by flowing at rate of 270 barrels per hour, based on a brief open casing and tubing gauge, after using 3000 gallons of acid at 3590 feet. Main pay was logged at 3578-3584 feet, with an elevation of 2775 feet. This north extension is about 50 feet lower on structure than nearest production. Magnolia Petroleum Company has authorized a south offset, and Gulf Oil Corporation is starting a west offset.

The latter concern added to its string of big wells in the area by completing Waddell 14 with an estimated potential of 8640 barrels after using 5000 gallons of acid at 3531 feet. The hole was plugged back from 3536 feet when water appeared after a nitro shot at 3496-3532 feet.

Rated as one of the largest producers in the Gulf-McElroy field, Gulf Oil Corporation's Crier-McElroy 20, an inside location for Upton County section of the field, earned a potential of 8000 barrels after a nitro shot at 2746-2875 feet. This well produced 3190 barrels oil and about 1½ million feet of gas prior to the shot.

The high structural position reflected by Humble Oil & Refining Company's Wales Eubank 1, C SW SW Section 6, Block AX, PSL Survey, Gaines County, affords a bright outlook for the completion of a producer. Drilling was in progress below 4100 feet late last week. Top of the Brown lime was called at 3950 feet, or 585 feet sub-sea. This wildcat is about 8 miles northwest of a small pumper recently completed by Landreth Production Corporation, and is about 165 feet higher on structure than the latter, based upon Brown lime correlations. Both prospects are probably on the same structure. All intermediate acreage has been leased.

In southwestern Yoakum County, Bahan Rhodes and Fitz-Patrick's Henard 1, C SW Section 367, Block D, is likewise commanding attention on the strength of its high structural position for the region. Top of the Brown lime was called by owners at 4490 feet, or 799 feet sub-sea, and drilling was in progress below 4630 feet, according to late reports.

TEXAS PANHANDLE

Completions

Company, Well and Location	Init. Prod Bbls.	Depth
CARSON COUNTY—		
Gulf, B. F. Block 8	500	3130
Ryan Consol'd Pet. Corp., Block 12	632	3185
GRAY COUNTY—		
Bradshaw O&G Co., M. Vaniman 3.	779	3314
Skelly, H. Schafer 74	932	3310
HUTCHINSON COUNTY—		
Phillips, J. J. Perkins 4	100	3032
MOORE COUNTY—		
Shamrock O&G Co., A. F. Robertson 1-E	¶15.3	3622
WHEELER COUNTY—		
C. A. Lupton et al, Stewart 1	208	2121

*Failures; †Junked; ¶Million cu. ft. gas.

NORTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
C. B. Bailey et al, Geo. Parrish 3-A, sec 105	*	1298
J. C. Beasley et al, B. T. McCarthy 2	*	1385
L. T. Burns et al, J. S. Bridwell 1	*	921
R. H. Busby et al, J. F. Kovar 1, sec 2438	*	1436
Frasher & Proctor, L. F. Wilson 1, lot 264	*	949
H. B. Hill et al, P. D. Thomas 1, sec 10	*	1803
W. H. Junker et al, Junker-Kunkle 2, blk 12	*	1274
A. P. Nicholson et al, H. O. Prideaux 1	*	741
CLAY COUNTY—		
Metzner & Burns, J. J. Taylor 3, sec 23	*	360
COOK COUNTY—		
J. L. Anderson et al, F. A. Bruhlmeyer 1	529	2042
Anderson-Kerr Pet. Co., S. M. King 1	530	2056
Wm. C. McKemie 1	*	2754
Amanda Wilson 1	*	2390
B. H. Hilburn et al, V. M. Hugan 1	*	1803
Ruwaldt-Couch Pet. Co., R. W. Trew 4	15	1104
Seitz-Comegys & Seitz, Inc., Trew 13-A	170	1199
Trew 14-A	*	1688
United Producers Co., Trew 3	110	1631
JACK COUNTY—		
Brazos River Gas Co., H. C. Moore 2	*	2999
Lewis Prod. Co., J. W. Birdwell 3	*	3035
MONTAGUE COUNTY—		
Arco Oil Co., M. Salmon 5-D	35	1184
WICHITA COUNTY—		
L. T. Burns et al, Waggoner Bros. 14, blk 8	*	1570
Coleman & Coppock, G. R. Hodge 3, blk 39	5	850
H. I. Covert et al, W. E. Marshall 1	*	857
King Oil Co., Waggoner Est. 11-H	72	1556
Rathke Oil Co., Murray 11, blk 127	17	864
C. P. Sheldon et al, Robinson 4, blk 310	12	1945
The Texas Co., W. P. Herron 8, sec 9	34	1067
WILBARGER COUNTY—		
Fain-McGaha Oil Corp., Waggoner Est. 14-Y, sec 43	150	2406
W. I. Wilson et al, J. J. Mulloy 1	*	650
YOUNG COUNTY—		
Paul Atchley et al, Benson 4, sec 1392	*	980
C. C. Curtis et al, G. R. Bishop 1, sec 347	*	1042
B. C. Gilmore et al, J. W. Cox 1, sec 18	*	633
D. M. Knox et al, Burkett 5, sec 3412	*	2753
Perkins-Cullum Oil Co., L. F. Gragg 1-A	*	732
Pet. Producers Co., C. E. Luton 3.	25	682
Roberts Oil Corp., Ann Brogden 2.	†	2435
S. H. Simmons et al, J. O. Stratton 1	*	540

*Failures; †Junked; ¶Million cu. ft. gas.

WEST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CRANE COUNTY, (Gulf-McElroy Field)—		
Gulf Oil Corp., Crier-McElroy 19	382	2940
Crier-McElroy 20	3190	2875
CRANE COUNTY, (McCamey Field)—		
Conoco, Cowden 4-B	223	2460
ECTOR COUNTY, (North Cowden Field)—		
Alma Oil Co., TP Land Trust 2	309	4215
FISHER COUNTY—		
Dean Bros. et al, M. E. Herring-Condor 4	771	3110
Gen'l Crude Oil Co., L. J. Sipe 3	150	3140
HOWARD COUNTY—		
Conoco-Group 1 Oil Corp., Eason 9	1582	2457
Shasta Oil Co., Dodge 6	1032	2748
JONES COUNTY—		
Consolidated Oil Co., Hamilton 1	*	2255
N. H. Martin & Son, H. Dorsey 2-D	2274	2217
Sinclair Prairie, B. King 1-A	2500	2217
Ungren & Frazier, H. Dorsey 6-C	2500	2214
PECOS COUNTY, (Masterson Field)—		
Adams and Acro Gas Ref. Co., D. B. Gregg 1-B	553	1486
PECOS COUNTY, (Torborg Field)—		
H. A. Baker et al, Paul Childress, Tr., Smith-Douglas 5	103	360
Phil Broun et al, Tippett-Humble 15	67	581
PECOS COUNTY, (Yates Field)—		
Marathon, I. G. Yates 11-G	25,320	1252
SCHLEICHER COUNTY—		
Mangus Oil Corp., Judkins-Spencer 1	*	6527
TAYLOR COUNTY—		
Geo. Callihan et al, S. J. Winter 1	*	2035
UPTON COUNTY, (McCamey Field)—		
Geo. E. Farley et al, Lane 3-B	238	2292
Humble, A. A. Reese 1	312	2630
Shell, Della Bowen 29	610	2202
TP Coal & Oil Co., Lane 13-C	311	2233
WARD COUNTY—		
W. A. Black & Sons, York 3	1387	2540
Bond Oil Corp.-Lee Harrison, J. W. Maxwell 3-A	2060	2530
California Co., L. A. Adams 4	1131	2580
Ann B. Gordon 31	671	2532
Empire O&R Co., McDonald 3	643	2525
FHE Oil Co., L. Richter 2-A	1157	2570
Hal C. Peck et al, Monroe 1	229	2327
Sid Richardson Oils, Inc., University 1-B	377	2736
Wahlenmaier Pet. Corp., R. O. Potts 6	462	2350
WINKLER COUNTY, (Gulf-O'Brien Field)—		
Magnolia, J. Sealy 4	50	3129
WINKLER COUNTY, (Halley Field)—		
Eastland Oil Co., Halley-Amerada 1	485	2900
WINKLER COUNTY, (Henderson Field)—		
Shell, R. A. Leck 1	*	3450
WINKLER COUNTY, (Keystone Field)—		
Amon G. Carter et al, Walton-Pure 3	347	3400
Gulf, Keystone 13	151	3525
WINKLER COUNTY, (Sayre Field)—		
Humble, N. R. Colby 4-A	850	3015
Illinois Oil Co., McCutcheon-Conoco 1-A	970	2973
Shell, Ida Henderick 1-K	315	3014
TP Coal & Oil Co., Daugherty 11	846	2970

*Failures; †Junked; ¶Million cu. ft. gas.

New Field Looms

MILLS BENNETT'S REFUGIO COUNTY WILDCAT SHOWS

SOUTH TEXAS WEEKLY STAFF REPORT

Corpus Christi.—A new Frio sand field for Refugio County seemed highly probable last week with Mills Bennett Production Company's Fred Walzel making a second test, a sand topped at 5995 feet. The well is in the northeast corner of Section 13, Bonnie View Ranch Subdivision, E. Lopez Survey, seven miles south of Refugio. The tool slipped on the first drill stem test at 5995-6000 feet, but 11 fourbles of mud cut with distillate were recovered.

This well is the first in a rather interesting wildcatting campaign being launched in this portion of Refugio County. Two other wells are commencing on rather promising geological and geophysical structures.

An extension of nearly a mile to the southwest was effected in Heyer field, Calhoun County, by Humble Oil & Refining Company and Plymouth Oil Company's E. H. Welder 2, which is in sand at 5454-73 feet. The well has been showing a rather high gas/oil ratio and has been reworked in an effort to lower the gas volume. The same companies are preparing to move onto P. H. Welder B-1, east corner of Cisneres Survey, 3000 feet northwest of production.

Production Purchased

Several deals for production were made in the Corpus Christi district during the week, the largest being by the Pan American Production Company. The company purchased half interest in 329 acres of leases in the Rand Morgan tract held by the Morgan Gulf Oil Corporation for a consideration of $220,000 in cash and the drilling of nine free wells. The tracts are in the 5800-foot sand areas on the west side of Saxet field, Nueces County, and are known as the "A", "C", "D", and "F" leases upon which four deep producers already are productive. There is offset production in shallower sands, and part of this acreage has been reserved insofar as the shallower sands are concerned.

Another indication of production values in this district is a deal made by the Conroe Drilling Company for the one-half interest of the Texon Royalty Company in a 40-acre lease on the Pullin land out of Section 1, Second Addition of Taft Farm Lands, San Patricio County. The company is to drill one well to the 3900-foot sand and upon the completion of the same, it is to pay $10,000 cash to the Texon Royalty Company. The Conroe concern then is to drill a well to the 4900-foot, or discovery sand.

Heavy Saxet Campaign

A rather heavy development campaign is shaping up in 5800-foot sand area of the Saxet field. The average completion is for about 175 to 250 barrels of oil per day through ⅛-inch choke, indicating potentials ranging up to 1500 to 2000 barrels per day through tubing. The gas/oil ratio is low in comparison with a number of the other sand areas of this district. A sand section ranging up to 50 feet in thickness with a probable recovery of 22,000 barrels per acre makes the field doubly interesting.

The above field compares favorably with Tomoconnor field, Refugio County, which has a much thicker sand section and probable higher recovery. Both, however, are in the Frio.

A production test was scheduled late in the week on Buckingham Oil Company's McCampbell 1, potential producer in the Aransas Pass area of Aransas County. The well originally drilled to 7501 feet, ran an electric formation tester and plugged back to 6535 feet for a test. It ran wild, the drill stem stuck, and the hole had to be plugged back and sidetracked. The well then was drilled to 6560 feet, finding saturation at 6535-46 feet, and casing was set on bottom. One-fourth mile southwest, but in San Patricio County, Atlantic Oil Producing Company's Maryland Trust Company 1 drilled to 5352 feet, twisted off the drill stem, plugged back to 4904, and has set whipstock to sidetrack.

Continental Oil Company is making rapid progress in drilling heaving shale in Austin (Vandenberg) 1, one mile north of the other tests on the Seadrift prospect, Calhoun County. At last reports, the hole was below 8245 feet, in shale. More than 1500 feet of hole was made in six days. A string of 11¾-inch special type casing was set at 6598 feet.

Benedum and Trees are moving in for a test to 8000 feet on a block of between 20,000 and 25,000 acres 10 miles southwest of Port Lavaca in Calhoun County. The well is John Reemer Estate 1, about the center of a 2300-acre tract in John Ogsberry Survey. This well is on a large structure indicated by a seismograph survey. The closure is reported at 600 feet.

Steinberger Petroleum Corporation encountered hard luck in S. G. Druschell 1, on the southeast edge of the Edna Gas field, Jackson County. It lost a slip at 5132 feet, but has cemented it off and is ready to drill ahead.

Bentonville-King area of Jim Wells and Nueces Counties, may be receiving two extensions, both by Stanolind Oil & Gas Company. Frame and Bowers 1, Section 14, on the extreme west side of the field, showed a sand section from 5396-5421 feet, and shale at 5421-25 feet. It showed considerable oil and salt water on drill stem test. Casing was set at 5405 feet and the casing will be gun perforated for test. Same company's J. J. Thompson 1, one mile south of the discovery oil well, drilled to 5705 feet, set casing just below the 4000-foot sand and will complete as a gasser at that level.

Benedum and Trees' Mrs. E. H. Welder 2, wildcat 3½ miles northeast of Sinton, San Patricio County, has been abandoned at 7019 feet. It had showings at 5700 feet and 6100 feet, and attempted for several weeks to complete at these levels.

Plymouth Oil Company's E. H. Welder 2-D, approximately one half-mile southeast of production in Sinton field, San Patricio County, got sand at 5533-41 feet and has set 7⅝-inch casing. This is the first well to be drilled in this field in months and apparently means that the company is to resume operations there. Plymouth field development is rapidly nearing conclusion, with this company completing 52 producers in succession without a single failure. They are in three separate sands.

LOPEZ EXTENDED

Cox and Hamon's wildcat opens large area

Laredo.—Lopez field was extended another mile northeast in Duval County last week to be the feature happening in the Mirando District. Several other wildcats gained a little attention, while a couple of key wells proved failures.

Cox and Hamon's J. B. Peal 1, NW NW Section 796, Duval County, was in the Mirando sand at 2140-45 feet and in final stage of completion late in the week. It is a mile north of the Magnolia Petroleum Company's Peal 1, which recently added a mile to the Lopez field. These two wells provide considerable territory for development.

Shell Petroleum Corporation's J. F. Welder Heirs 1-B, SWc of lease in Section 69, and 1½ miles northwest of the Loma Vista field, Duval County, was holding considerable attention as the week closed.

Rogers and Rogers were commencing a production test on Rita S. de Pena 1, in Share 4, Mesquire T. Vela Grant, in the extreme southwestern portion of the county. The well is in sand at 2850-62 feet. It is several miles southeast of Cole field and is showing for a small producer.

Conservative Oil Company's Duval County Ranch Company 1, SE NW Section 51, two miles southeast of Colemena field, Duval County, drilled to 2830 feet and ran an electric formation tester to 1559 feet. It showed a probable producing sand at 1559-1571 feet, and a new test has been commenced 660 feet to the northwest to test sands commencing at 1533 feet which showed both oil and gas, but which developed salt water on a production test.

After working for a week in an attempt to establish production, C. G. Glasscock finally has abandoned Milano Land and Gardens Company 2, Section 88, four miles southeast of Loma Novia field. The well was deepened to 3405 feet without increased oil in the Mirando sand.

A steady, but conservative development campaign is underway in several fields of this county. The main atten-

tion is directed toward the Loma Novia sand production on the east side of Seven Sisters field, where several outpost wells are in process of completion. Over in Webb County, Lopez field continues to provide several producers per week, as does the Cole district.

Humble Oil & Refining Company's D. W. Rhodes 2, SE SW SW Section 17, McMullen County, and two miles northeast of Rhodes field, is coring for Mirando sand after testing salt water in the Government Wells horizon. It is below 2575 feet. This well showed gas in the Cole at 1731-36 feet.

TEST SCHEDULED

Zeni's wildcat in Goliad County has good kick

Beeville.—A production test likely will be made over the week end in Zeni Oil Corporation's M. Lutenbacher 3, wildcat two miles south of Goliad in Goliad County. The well is in the Pettus sand at 5365 feet, casing set at 5352 feet. It attempted to blow out when plugs were drilled and it is now standing for three inch drill stem, which will be used in coring the hole deeper before final completion.

The test is in SWc SE Section 25, Goliad Townsite Survey.

Another well in wildcat territory which may open a new field is H. A. Pressy's R. T. Hicks 1, Uranga Grant, 4½ miles northwest of Normanna. The well drilled to 3568 feet, set casing on bottom, and perforated at 3482-3502 feet in a gas sand. It was swabbing at last reports.

Adolph Douver's San Antonio Joint Stock Land Bank 1, wildcat two miles northwest of Three Rivers in Live Oak County, was scheduled to gun-perforate casing at 1808-15 feet for a production test in the Pettus sand. The well showed for a 25,000,000 cubic-foot dry gasser in upper Cockfield at 1791-1802 feet, then encountered shale at 1802-8 feet.

Pettus sand was cored at 1808-21 feet, and was drilled to 1832 feet, where four feet of rock was encountered. The sand showed nice oil saturation. It was carried ahead to 2002 feet, the contract depth, finding salt water in the Conroe sand at 1977-2002 feet. A string of 5 3/16-inch casing was hung at 1865 feet and cemented with 150 sacks of cement.

This well is in Plat 27 of the Tipps subdivision, Richard Everett Survey.

NEW SAND FOUND

Samfordyce well shows in Barlow at 2953 feet

Mission.—A third oil producing level for the Samfordyce field, Starr-Hidalgo Counties, was being established this week as a result of the completion of Danvers and Harrison's Uvalde Villalon 1. The well is in the Barlow sand at 2953 feet and is showing considerable oil while flowing through an eight-inch choke. It has a casing pressure of 900 pounds and tubing pressure of 275 pounds.

The well encountered gas sand at 2929-43½ feet, cap at 2943½-44 feet, oil sand at 2944-47 feet and shale at 2947-53 feet. Casing was set on bottom and perforated at 2940-47 feet.

J. T. Barlow's Chapa 1 was completed in this sand several weeks ago, but it made a gasser spraying oil. Attempts were made to rework it by sidetracking and redrilling the sand, but with the same results. It is now sidetracking and drilling ahead again.

Recently G. W. Wheeler et al's F. Farias 2 was completed in the 2800-foot sand, which is about midway between the regular Samfordyce sand and the Barlow horizon.

BALCONES REVIVED

Two wildcats promising commercial production

San Antonio.—Balcones Fault zone regained the spotlight during the week with two wildcats in process of completion. One indicates a new field of Atascosa County, while the other is in Caldwell County.

H. B. Starkey et al's Francis-Brown-Cochran 1, about four miles northeast of Luling, in Caldwell County, several hundred feet from the Gonzales County line, set a string of 5 3/16-inch casing on packer to test a Navarro sand showing at 1742-47 feet. The well showed considerable gas and oil and probably will be a well of fair proportions. It is located 450 feet from the southeast and southwest lines of a 291-acre tract in the W. F. Young Survey.

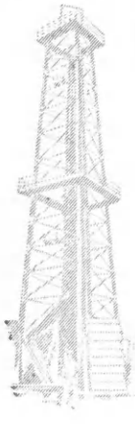
The other test in process of completion is Helvetia Oil Company's Susie Pratt 1, 30 miles south of San Antonio and in Atascosa County. The hole is bottomed at 2300 feet, with seven-inch casing set at 2249 feet. The showing is in a sand and sandy shale section, likely in the upper portion of the Taylor. The Navarro was topped at 1702 feet. Susie Pratt 1 is located 1400 feet from the northwest line and 1000 feet from the northeast line of a 176-acre tract in the F. de la Garza Survey No. 46, and is one mile northwest of the town of Anchorage.

J. E. Clark et al's E. W. Williams 1, located about three fourths-mile south of the South Darst Creek field, Guadalupe County, finally has been completed as an Austin chalk producer. It plugged back from 2522 feet to 2495 feet, set casing at 2357 feet, just above the chalk topped at 2358 feet. It made about 2½ barrels per hour on pump.

SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BEE COUNTY—		
Eden Oil Co., J. E. Copeland 1, 1723 ft nwl, 1650 ft swl of Obed Marshall sur	*	3596
BEXAR COUNTY—		
Armoil Prod. & Wm. Stewart, G. H. Vogt 3, 150 ft el of tr, 300 ft s No. 1, sur No. 53 (Von Ormy)	5	725
O. M. Owensby et al, Minna Coreth 1, 460 ft sl, 1200 ft wl of tr in Adam Stafford sur	*	1091
BROOKS COUNTY—		
Fairway Prod. Co., Wm. Singer 1, 1530 ft sl and el of sur 312 (Alta Verde)	*	1006
DUVAL COUNTY—		
Atlantic Oil Prod. Co., J. F. Welder heirs 4-E, sec 102 (Seven Sisters)	440	2430
Bridwell Oil Co., Wm. Hubberd 10-C, sec 75 (Loma Novia)	110	2563
Conservative Oil Co., DCRC 1, 330 ft sl and el of nw¼ of sur 51	*	2830
Continental Oil Co., Clara D. Sevier 9-A, sec 23, (Driscoll)	65	3604
Ralph E. Fair, W. K. Hoffman 1, sec 114 (Hoffman)	*	3000
C. G. Glasscock, Milano Land and Gardens Co. 2, 330 ft nl, 213 ft el of sur 88	*	3405
Frank J. Gravis et al, Gravis 1, 990 ft swl, 1650 ft sel of sur 250	*	5150
Highland Oil Co., M. C. Hubberd 24, sec 72, (Loma Novia)	135	2767
M. C. Hubberd 31, sec 72, (Loma Novia)	135	2762
Humble, M. C. Hubberd 41B, sec 72 (Loma Novia)	1005	2741
M. C. Hubberd 58B, sec 72 (Loma Novia)	385	2756
T. D. Smith 14, sec 382 (Seven Sisters)	715	2479
Magnolia, DCRC 6, sec 95 (Piedre Lumbre)	290	1959
Navarro Oil Co., W. R. Peters 1, 330 ft sl and el of 3 480-ac sur 39 (Peters) perf 1780-90	120	3005
J. F. Welder heirs 1B, sec 383, (Seven Sisters)	440	2470
Pan American Oil Co., J. F. Welder heirs 4C, sec 383 (Seven Sisters)	625	2473
Randon Oil Co., Central Securities Co. 1, 8750 ft w of el Diego Hinojosa gr and 2000 ft n of w extension of line between Santos Gravis and Jose Marcello Hinojosa gr or 330 ft nl and wl of lot 23 Central Securities subd.	*	4605
Reynosa Oil Co., Mary Davidson 6B, sec 114 (Loma Novia)	50	2555
Shell Pet. Corp., M. C. Hubberd 28, sec 77, (Loma Novia)	128	2732
V. Mendoza 9, sec 68 (Loma Novia)	402	2790
Smith & Hamill, M. C. Hubberd 13, sec 77, (Loma Novia)	690	2650
M. C. Hubberd 14, sec 77, (Loma Novia)	432	2670
Starr Dev. Co., S. Benavides 1, sec 173 (Cole)	*	2948
The Texas Co., Hugo Wendt 45, sec 68 (Loma Novia)	635	2645
Westheimer & Daube, Z. Campos 12, sec 224, (Seven Sisters)	135	2699



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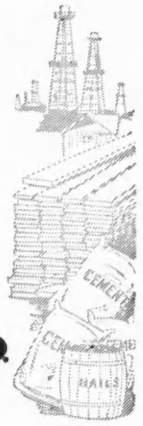

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Company, Well and Location	Init. Prod. Bbls.	Depth
GUADALUPE COUNTY—		
Clark & Weinert, W. O. K. Anderson 1, 6375 ft nl, 1700 ft el of Green DeWitt sur No. 11	*	2232
J. E. Clark et al, E. W. Williams 1, 2650 ft el, 14,050 ft sl of Green DeWitt sur 13, pb to 2495 ft (s Darst Creek)	60	2522
Louis Crouch, J. Getzke 2, J. D. Clements sur, (Zoboroski)	108	2383
W. J. Walton et al, W. F. Krueger 1, H. Brand sur (Zoboroski)	20	2379
McMULLEN COUNTY—		
R. P. Lightfoot, H. L. Lark 8, blk 114, E. W. B. Scrugham sur (Calliham)	15	1043
NUECES COUNTY—		
W. W. Chapman, Trustee, Morgan-Clark 2, BS&F sur 405 (Saxet)	808	5819
Mrs. J. A. Walsh 1, lots 39, 40, 41 and 42, Country Club Place (Saxet Heights)	435	4082
Cherokee Oil Co., W. E. Morris 1, blk 10, Bancroft Farm lots (Saxet Heights)	336	4075
Circle Oil Co., Pete Whelan 2, Villareal gr, (Saxet Heights)	485	4066
Aaron Cohen, Fee 1, Webb 1000-ac gr (Saxet Heights)	490	4083
Conroe Drilling Co., Rand Morgan 1-C, sur 403, (Saxet)	*	1000
J. K. Culton, J. L. & Frank Tribble 1, Villareal gr (Saxet Heights)	750	4094
W. L. Hinds, Edwin Flato 1, center blk 8, sec 107	*	6067
Holliday et al, J. Griffith 4, Stevens sur (Saxet)	900	5835
Frank Jones et al, Carson 1, Frank sur 416, (Saxet), owdd, otd 4725	*	5843
Marine Oil Corp., A. J. Geistman 2, Villareal gr (Saxet Heights)	435	4081
North Star & Morgan Gulf, Humphrey 2, Stevens sur 406 (Saxet)	800	5826
Rand Morgan 2, BS&F sur 405, (Saxet)	800	5833
Renwar & Maryland, R. W. Kaler 1, Villareal gr (Saxet Heights)	125	4050
Southern Minerals Corp., Mrs. M. B. Maston 2, G. Frank sur 416 (Saxet), perf 5751-55 ft.	305	5850
Taylor Pet. Co., J. B. Dunn et al 2, Villareal gr (Saxet Heights)	330	4053
Texon Royalty Corp., May Lingnau 2, sec 404, C. Land sur (Saxet)	370	4437
J. L. Scoggin 1, GC&SF sur, sec 315 (Saxet)	365	4426
REFUGIO COUNTY—		
DeWitt & Dougherty, M. F. Lambert 25, blk 25, Hardwick sur (Greta)	900	5898
United Prod. Co., Fannie Heard 12, lot 15, Refugio Town Sites sur (Refugio) owdd, otd 4922	528	4929
SAN PATRICIO COUNTY—		
Benedum & Trees, Mrs. E. H. Welder 2, 1600 ft sl and el of sec 19, Welder Ranch subd 5	*	7019
Plymouth Oil Co., E. H. Welder 52C, sec 49, Welder Ranch subd (Plymouth)	725	5504
Sun Oil Co., J. K. Edgar 3, sec 34, Taft Farm Lots (Plymouth)	725	5628
Taft Prod. Co., W. D. Thomas 1, 150 ft nl and el of tr 5, sec 6 of 2nd addition to Taft Farm Land subd (Taft)	*	6009
STARR COUNTY—		
John H. Clopton, Kelsey-Bass 3, 2460 ft el of porc 87, 21,665 ft n of State Highway 4	*	710
Porter Evans, SCCC 1, beginning at State Highway 4 where it crosses the wl porc 89, thence s along wl porc 89, 13,000; thence e at rt angles 500 ft to lcn	*	3210
Sun Oil Co., Garcia Land & Cattle Co. 1, porc 100 (Samfordyce)	*	2800
M. Guerra & Sons 11-A, sh H-14-B, Las Cuevitas gr (Cuevitas)	225	2291
WEBB COUNTY—		
Mills Bennett, E. L. Valadez 11, sec 114 (Lopez)	520	2220
E. L. Valadez 12, sec 114 (Lopez)	466	2232
G. G. Mortimer, Jesus Lopez 2, sec 73 (Lopez)	576	2182
Superior Oil Co., W. C. Billings 11, sec 109, (Lopez)	535	2262
ZAPATA COUNTY—		
Upchurch & McKay, A. P. Haynes 5, blk 7, Haynes subdivision, Comitas & Villa gr (Comitas)	57	939
ZAVALLA COUNTY—		
Frank Buttram et al, Whitecotton 1, 2400 ft wl, 330 ft nl of AB&M sur No. 1	*	5766

*Failures; †Junked; ¶Million cu. ft. gas.

Nome Test Shows

SHELL WILDCAT MAY GIVE GULF COAST NEW FIELD

WEEKLY STAFF REPORT

Houston—Possibility of another field in the Texas sector of the Gulf Coast loomed July 17 when Shell Petroleum Corporation's Carpenter 1, Nome prospect, Jefferson County, showed 40 stands of 26.1 gravity Marginulina oil on a drill stem test at 5990-6058 feet, plug-back depth of the wildcat. Seven-inch casing has been set at 6005 feet, and a production test will be made.

On the above drill stem test the showing was made in 9 minutes through two ¼-inch chokes carrying 50 pounds pressure.

While drilling Carpenter 1 to the Vicksburg formation a gas show was encountered at 5193 feet. June 11, 1936 drill stem tests were made from 5954 to 6013 feet. The best recovery was from a test of formation from 6013 to 6023 feet, which showed 33 stands of 26 gravity pipe line oil and an 80-pound pressure. The test was made through two quarter-inch chokes. On a drill stem test from 6033 to 6047 feet, 180 feet of pipe line oil was recovered in 10 minutes. The pressure was only 60 pounds. After making another series of drill stem tests, one was made from 6090 to 6116 feet which showed 16 thribbles of salt water. A sand was cored from 6391 to 6403 feet which showed a good cut on an ether test.

Hardin County Show

Another wildcat which stepped into the spotlight at the end of the week was Republic Production & Houston Oil Company's Brooks 1, Silsbee prospect, Hardin County. A drill stem test made July 17 at 6840 feet showed a 400-pound pressure and oily mud. On the drill stem test from 6735 to 6840 feet in the Cockfield formation the wildcat showed two tribbles of sand and mud with a trace of oil. The wildcat showed a gas pressure of 400 pounds in 10 minutes through two ¼-inch chokes.

Brooks 1 makes the third wildcat drilled on the Silsbee prospect in Hardin County. The operator's Burrell 1 and 2 were abandoned in the Yegua formation some time ago. Brooks 1, 6000 feet east of Burrell 2, J. W.

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Brooks Survey, is running approximately 80 feet higher than the abandoned tests on geological markers.

Northwest of The Texas Company's Pierce Estate B-1, a gas well, and 13,000 feet west of the Withers field, Wharton County, is The Texas Company's Pierce Estate B-2 indicated on a drill stem test that it may produce oil and be the first oil producer 2½ miles west of the Withers field or open a new oil field for the Texas Company. At the end of the week the operators were making another drill stem test at 5535 feet. On the last drill stem test from 5533 to 5543 feet the testing tool failed to open. From 5524 to 5544 feet the drill stem test was made which showed 1150 pounds pressure and 10 feet of oil mud through two ¼-inch chokes in 14 minutes.

The Texas Company's Pierce Estate B-1, which is thought to be part of the Withers field and which is 13,000 feet west of the oil producing area, came in some time ago from 5537 feet making two million cubic feet of gas daily with a tubing pressure of 1800 pounds and a casing pressure of 1900 pounds. The well has been shut in since completion in the Frio.

Another interesting wildcat on the Texas Gulf Coast is Gulf Oil Corporation's Fairfield 1, waiting on cement to set after setting 4½-inch liner at 8650 feet. A production test will be made soon. Fairfield 1, on the Lockridge prospect, A. Robeson Survey, Brazoria County, was drilled to 8689 feet, and is reported to be in the Jackson formation.

At one time Gulf Oil Corporation's Fairfield 1 was considered to be the discovery well for a new field in Brazoria County. On March 20, 1936, the wildcat flowed 85 barrels daily of 42 gravity oil through a ¼-inch choke from 6220 feet, but later started making salt water. The test was killed. Several drill stem tests were made around 6220 feet which showed oily mud and pressures up to 1600 pounds. After setting seven-inch casing at 6260 feet the production test was made which showed oil and salt water. At 8396 feet the crew encountered a sand and while preparing to core the well blew out and blew gas for 30 minutes before it was brought under control. The wildcat showed a pressure of 2300 pounds and also made salt water. After a long fishing job the hole was plugged back and was whipstocked at 6239 feet. Another fishing job was encountered after drilling 18 feet and the hole was again plugged back to 6275 feet. A sand was cored with an odor of oil from 8580 to 8585 feet.

Gulf Oil Corporation's Moore 47, Orchard field, Ft. Bend County, which flowed oil the previous week when the operators started coring at 1265 feet, was completed last week. The well came in making 168 barrels daily through a ¼-inch choke with a working pressure of 100 pounds. The well discovered a new sand for Orchard field, and it was a complete surprise to the operators.

Two Van Vleck Wells

Skelly Oil Company completed two new wells in Van Vleck field, Matagorda County, last week. Cobb B-8 was completed at 7495 feet flowing at the rate of 669 barrels daily through ¼-inch choke with a tubing pressure of 1125 pounds and a casing pressure of 1175 pounds. Seven and five eighths-inch casing was set at the bottom and was perforated. Cobb B-8 is a northeast offset to Moore 1, M. Cummings Survey. Moore 1, north offset to Rudgley 1, M. Cummings Survey, Van Vleck field, Matagorda County, also was completed at 7495 feet, making 32 barrels per hour through ¼-inch choke with a tubing pressure of 800 pounds and a casing pressure of 1100 pounds. Seven-inch casing was cemented at bottom and was perforated with 40 shots from 7479 to 7494 feet. Oil sand was topped at 7463 feet.

Mayo & Dozier have made location for a wildcat in the J. G. Loving Survey, Polk County. It is 1669 feet north of the south line and 1255 feet west of the east line of Survey. At the end of the week the operators were digging pits.

Amelia Outpost Abandoned

North of Amelia field, Jefferson County, Glenn H. McCarthy abandoned Langham 1 at 6766 feet in salt water sand. The operators drilled Langham 1, H. Williams Survey, to 6766 feet, and then plugged the hole back to 6005 feet. Casing was perforated from 5997 to 6000 feet with 24 shots and the well swabbed salt water with a trace of oil. Glenn H. McCarthy will move the rig to Chambers County where the operators will drill Kilgore 1 on the Cotton Lake Prospect.

Humble Oil & Refining Company's Pinchback 1, northwest of the discovery well at Amelia, which was completed the previous week at 6778 feet making 18 barrels per hour through a quarter-inch choke with a tubing pressure of 1450 pounds and a casing pressure of 1900 pounds, has been killed because of the high gas/oil ratio. The well will be drilled a few feet deeper and recompleted.

Tide Water Oil Company's Brown 1, Cow Bayou prospect, M. Latham Survey, Orange County, was abandoned at 7706 feet after finding the Frio formation barren.

Zeni Oil Company's W. A. Perkins 1, Hockley Dome, A. Sherrell Survey, Harris County, was abandoned last week at 7520 feet after failing to find anything of commercial value.

Dick Schwab, abandoned Kirby Lumber Company 2-A, 660 feet north of Kirby Lumber Company 1-A, T. A. Sublett Survey, Ace field, Polk County. Kirby 2-A was the second location in the field.

Northwest of production at South Houston, Stanolind Oil & Gas Company's Pittman 1, H. & T. B. Survey, No. 6, Harris County, flowed oil by heads last week, and at the end of the week the operators were preparing to swab. The hole was drilled to 4800 feet in oil sand, and seven-inch casing was cemented at 4697 feet.

Stanolind Oil & Gas Company completed Barrett 2, Unit 2, last week, at 4800 feet flowing at the rate of 314 barrels in 18 hours through ¼-inch choke, with a tubing pressure of 500 pounds and a casing pressure of 200 pounds.

The northern portion of Anahuac field, Chambers County, was extended one location west last week when Sun Oil Company completed White 15, J. McGehey Survey, for 678 barrels daily through ¼-inch choke, with a tubing pressure of 1000 pounds and a casing pressure of 1050 pounds. The hole was drilled to 7100 feet in sand showing oil. Top of the sand

was found at 7042 feet. This well has been in the oil sand for several weeks, but due to a fishing job operations were delayed.

Humble Oil & Refining Company completed Middleton 19 for 26 barrels per hour of 34.8 gravity oil through ¼-inch choke from 7085 feet.

On the northwest side of Anahuac Humble Oil & Refining Company was preparing to complete White B-2, J. McGehey Survey, at 7113 feet in the Frio formation. Oil sand was topped at 7097 feet and 7-inch casing was set. The operators will drill the plugs next week.

On the north side of the field, the same operator's White 12, J. McGehey Survey, was also waiting on cement to set at 7000 feet. The hole was drilled to 7115 feet in oil sand after topping the sand at 7101 feet.

On the north side of the western part of the Hastings field, Brazoria County, Stanolind Oil & Gas Company completed Moore 1 at 6069 feet after coring sand showing oil from 6046 to 6062 feet and setting seven-inch casing at 6040 feet. The test came in flowing 321 barrels in 19 hours through ¼-inch choke, with a tubing pressure of 560 pounds and a casing pressure of 600 pounds.

Stanolind Oil & Gas Company also completed Shaw 6, H. & T. B. Survey, No. 36, for 440 barrels in 17 hours through a ¼-inch choke, with a tubing pressure of 600 pounds and a casing pressure of 550 pounds. Oil sand was topped at 5753 feet.

Humble Oil & Refining Company's Cannon 6, H. & T. B. Survey, No. 6, and on the west side of the field, was nearing completion at the end of the week. The hole was carried down to 6060 feet in sand with the top of the sand found at 5857 feet. Seven-inch casing was set at 5843 feet.

Sun Oil Company's Craig 1, discovery well on the east flank of the Hawkinsville dome, T. Williams Survey, Matagorda County, was swabbing 12 barrels of oil daily from 5160 feet at the end of the week. The well is making approximately two percent basic sediment and water. It came in for 86 barrels daily after perforating casing from 5150 to 5160 feet. The operators may rework the well.

Sun Oil Company's Broussard 1 on the Labelle prospect in Jefferson County, J. Blackmon Survey, which blew out the previous week at 9843 feet in sand was fishing at the end of the week. It is the deepest well on the Texas Gulf Coast.

Adrian Moore's Wilbeck 1, west of production at Pickett Ridge, J. Telfener Survey, Wharton County, was completed the past week as a gas well. Casing was perforated from 4699 to 4701 feet with 12 shots and the well came in making dry gas with a tubing pressure of 1940 pounds.

The Texas Company completed Pierce Estate A-25, I. & G. N. Survey, No. 39, last week. The well came in making 19 barrels per hour through ¼-inch choke, with tubing and casing pressures of 600 pounds. Depth is 4708 feet.

Humble Oil & Refining Company abandoned Bayou Development Company B-4 in the Dickinson field, Galveston County, last week at 8344 feet after making a drill stem test from 8020 to 8115 feet which showed 12 stands of salt water. The same operator's Maco Stewart B-6, on the northwest side of the field, was waiting on cement to set at 8045 feet after drilling to 8055 feet in sand. Top of the oil sand was found at 8050 feet.

TEXAS GULF COAST

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
AMELIA—		
Glenn H. McCarthy, Langham 1..	*	6766
ANAHUAC—		
Humble, Johnson 2	*	8000
Middleton 19	624	7085
Sun, White 15	678	7100
CONROE—		
Strake, Keystone Mills 8	505	5018
DICKINSON—		
Humble, Townes 4	552	8028
Stanolind, State 5	240	7980
ESPERSON—		
General Crude, Davis 17	*	1905
HASTINGS—		
Stanolind, Ras-Mussen & Moore 1.	408	6099
Shaw 6	624	6000
LOUISE—		
Pure, McIntyre 5	24	5150
ORCHARD—		
Gulf, Moore 47	168	1265
PICKETT RIDGE—		
Adrian Moore, Wilbeck 1	¶1	4701
Texas Co., Pierce Estate A-25	456	4708
PIERCE JUNCTION—		
Gulf, Cain 12	438	3985
A. & P. Production Co., Whitehead 3 (wo)	*	4843
SOUTH HOUSTON—		
Stanolind, Barrett Unit 2	408	4800
TOMBALL—		
Humble, Handy 3	288	5561
Hoffman 4	480	5586
VAN VLECK—		
Skelly, Cobb B-8	669	7495
Moore 1	768	7496
HARRIS COUNTY—		
Zeni Oil Co., Perkins 1, Hockley dome, A. Sherrell sur	*	7520
MATAGORDA COUNTY—		
Texas Gulf & Superior, Wadsworth 2, Sheppards Mott area, S. R. Fisher sur	*	1302
POLK COUNTY—		
Dick Schwab, Kirby Lumber Co. 2-A, Ace area, T. A. Sublett sur..	*	lcn.

*Failures; †Junked; ¶Million cu. ft. gas.

SOUTH LOUISIANA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ENGLISH BAYOU—		
Fohs Oil Co., H. Powers 1	612	7063
GILLIS—		
Union Sulphur Co., Barbe 7	515	6789
JENNINGS—		
Port City Oil Co., Jennings 7 (wo)	300	2111
LAKE PELTO—		
Texas Co., Lake Pelto 14	*	7270
SULPHUR—		
Union Sulphur Co., Fee 805, (wo)..	75	3632
TEPETATE—		
Continental, Welsh 3-A	275	8301

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS PERMITS

Austin, Texas.—The railroad commission approved last week permits for drilling 236 wells in the state, 64 less than were allowed the week before.

North Texas reported the largest number of new locations, 52, which included 16 in Wichita County, 16 in Young County, and 9 in Archer County. West Central Texas operators reported 11 new wells.

West Texas listed 53 locations, with 20 in Ward County, 16 in Winkler County, and 10 in Pecos County. There were 16 from the Panhandle, of which 9 were for new wells in Hutchinson County.

Southwest Texas listed 50 new locations, with 16 in Webb County, 10 in Zapata County, and 9 in Duval County. Gulf Coast operators listed 31 scattered locations.

East Texas operators obtained only 5 permits, of which 3 were for wells in Upshur County, one for Smith County, and one for Gregg County. East Central Texas reported 18 permits for locations along the fault.

SCOUT BARBECUE

Lake Charles.—The South Louisiana Oil Scouts Association was given a chicken barbecue July 13 by Harry T. McLain, managing director of the Charleston Hotel, at Lake Charles. More than 50 oil scouts, land men and geologists attended. The scout association voted McLain a life membership in the organization.

South Louisiana Scouts who hold weekly check meet at Lake Charles

Record Casing String

SEVEN-INCH TO 10,950 FEET IN TEST NEAR RECORD DEPTH

By BRAD MILLS, Associate Editor

THE case with which a new Gulf Coast depth record was made in Vermilion Parish, Louisiana, by Continental Oil Company indicates future development of producing zones now considered out of reach of the drill. The company's Alvin Hebert 1, Section 20-12s-3e, near Abbeville, has been drilled to 10,950 feet in less than 3 months and the hole is in condition for drilling to a much greater depth. This well was started with the Frio as a probable objective, but the great thickness of Miocene formations has changed the complexion of the test and it is difficult to predict the depth at which the top of any formation in the Oligocene will be found.

Alvin Hebert 1 became a very deep well in a short time, although it was not necessarily started as a record test. Drilling started April 15, 1936, and little mechanical trouble has developed. The formation stood up well after the short surface casing string was run, and a new record for open hole carried was made before drilling stopped for running the 7-inch casing. A string of 13⅜-inch casing was cemented at 1882 feet, and the more than 9000 feet of open hole carried for a short time is believed to be a new record for this phase of drilling.

No drilling has been done in the immediate vicinity of the well, but the formations seem to be thickening rapidly toward the coast line. Humble Oil & Refining Company topped the Heterostegina at 9228 feet in American Rice Mills 1, located about 12 miles northwest of Continental Oil Company's present test. Failure to pass out of the Miocene even at 10,950 feet in Alvin Hebert 1 indicates an unusual thickening of formations toward the coast line.

Although no plan has been announced, it is believed the well is in condition for drilling to 13,000 feet. Such a depth would establish a new world depth record by a good margin and would definitely place the Gulf Coast in line for a new type of development. Drilling is being continued with the reasonable hope that production will be found in the Frio or a formation in the upper Oligocene. The great thickness of sediments along the Louisiana coast line is reflected by continuation of the lower Miocene to a greater depth than was expected.

Long Seven-Inch

A string of 7-inch casing will be landed at 10,950 feet and drilling probably will be continued, although good oil showings have been encountered at much shallower levels. A slight oil show was logged in a salt water sand between 7338 and 7350 feet, but a production test was not considered. An electrical logging device was run to test a zone between 7668 and 7682 feet, and the formation showed 25 ohms resistivity and 95 millivolts. The same device was run to test a formation between 7884 and 8000 feet, and the top 10 feet showed 17 ohms resistivity and the remainder salt water. It will be an easy matter to test these showings by perforating the casing, should deeper drilling fail to show a major producing formation.

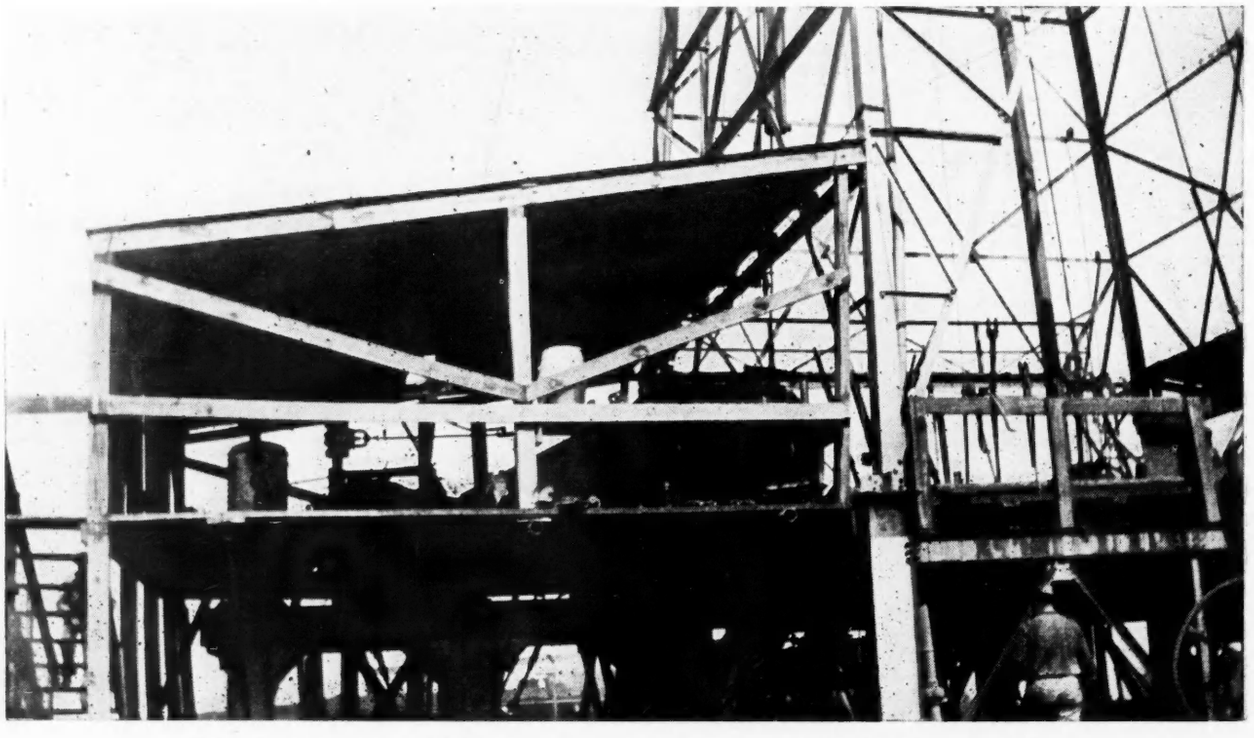
Continental Oil Company has about 7700 acres blocked near the well and apparently controls the best leases on the indicated structure. Geophysical work indicated a structural condition, but it was difficult to predict the depth at which probable producing zones would be found, due to the limited amount of drilling that had been done in the area. The Frio formation in the Oligocene was tentatively picked as an objective zone, but an open mind has been kept since drilling started.

Selected Equipment

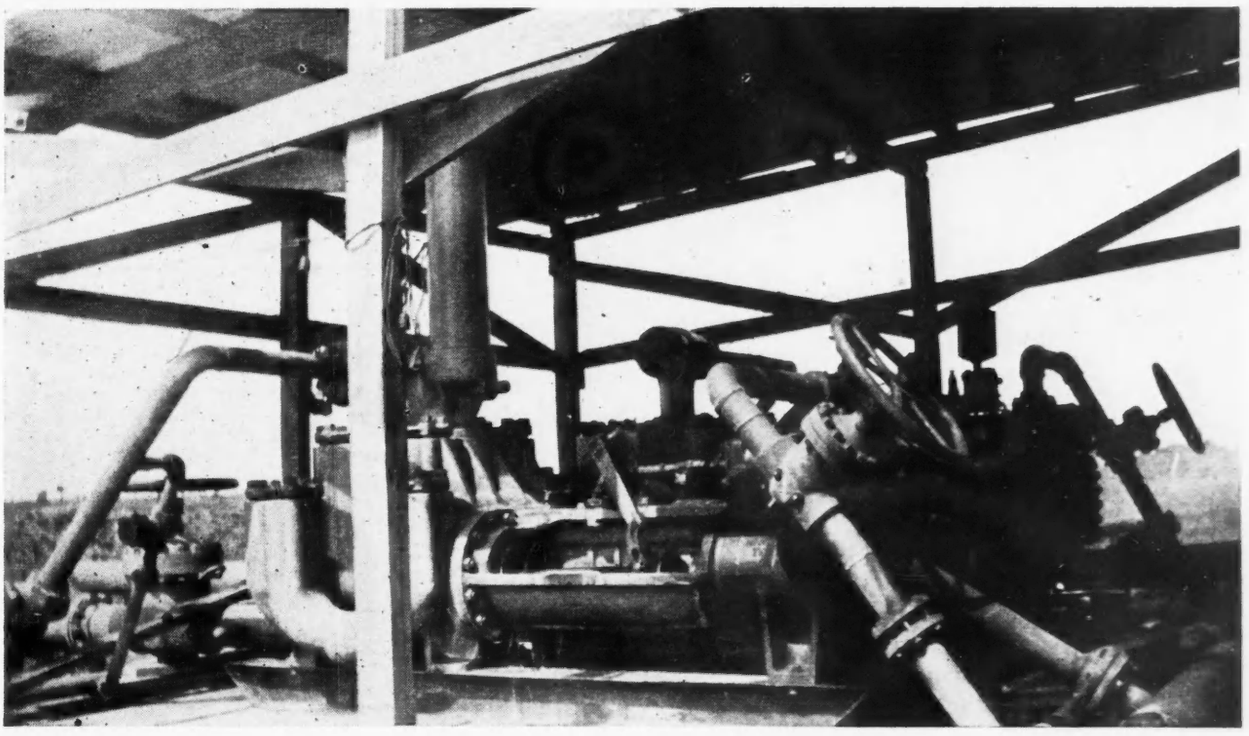
The drilling equipment used by Loffland Brothers, drilling contractors, compares favorably with the heaviest used for drilling previous 10,000-foot tests in other districts. It was assembled with the intention of drilling at least to 10,000 feet, and the care exercised in the selection of various items has repaid the company in the form of steady progress.

Four 350-pound working pressure boilers are used. The auxiliary equipment includes three 10 x 4½ x 10 feedwater pumps and automatic firing control for the gas fuel used.

A heavy, 136-foot steel derrick is used, and the foundation and sub-structures are



The derrick, engine and rotary substructure unit is one of the heaviest ever used along the Louisiana Gulf Coast



Two 20-inch pumps have played an important part in drilling to 10,950 feet in less than three months

especially interesting. The derrick rests on a full concrete mat and the heavy steel sub-structure unit consists of the derrick, engine and rotary supports. The derrick floor is fully elevated above ground as a safety measure.

The 14 x 14 twin drilling engine is the heaviest type manufactured, and its reserve power has proved to be an asset in the long in-and-out operations. The rotary table is the 29-inch type, while the swivel is one of the heaviest yet used along the Louisiana coast. The 76-inch traveling block was designed for very heavy duty, and a 1¼-inch casing line is used with it.

Two 15½ x 8½ x 20 slush pumps are used, and heavy circulation of mud under good pressures has been a factor in the rapid drilling to 11,000 feet. Two vibrating mud screens were installed.

Drilling has not been especially difficult at any level, all of the formations having stood up well as open hole was added. No lost-time accidents have occurred and no serious fishing jobs have developed.

Drilling below 10,000 feet has been about normal and the rock bits are changed after making from 75 to 100 feet of hole. The average time for the round trip in and out of the hole is about 5 hours. Three crews of 6 men each are employed for work at the present depth.

After cementing the 13⅜-inch casing at 1886 feet, a 12½-inch hole was drilled to 8000 feet. A 9⅞-inch hole was drilled from 8000 feet to the present depth. After running the 7-inch casing the hole will be large enough to continue without difficulty. Five-inch drill pipe was used to 8000 feet, and 4½-inch pipe has been used from 8000 feet to the present depth. After running the 7-inch casing, 3-inch drill pipe will be used.

The coring has been done with wire line core barrels. The hole has been surveyed regularly to check the deviation from vertical and it never has been off more than 1½ degrees. At 10,905 feet the hole was off vertical less than 1½ degrees. The 9⅞-inch rock bits run between 10,900 and 10,950 feet were the largest ever used at those depths. One bit used below 10,700 feet made more than 150 feet in 8 hours, but it was used again after pulling for examination. The large hole carried has been an aid, rather than a hinderance to progress below 10,000 feet.

The temperature at 10,950 feet was about 200°F., which was high enough to affect the action of the mud. This high temperature also is expected to give trouble in cementing the 7-inch casing. As a precaution against the heat, more than 10 tons of ice will be used in cementing operations. The small ice plant at the little town of Abbeville was asked to supply ice for the operation, and willingly agreed to do so. After the superintendent told the plant owner that at least 10 tons would be required on short order, the latter regretfully declined the order, explaining that he "never could make that much ice." The ice will be supplied from Lafayette.

Water for drilling operations is obtained from a well that was drilled to 270 feet. Gas for fuel is piped from Abbeville. Electricity for lights and other needs is provided by two small steam turbine-driven generators.

Third Deepest in U. S.

Alvin Hebert 1 is the deepest well ever drilled along the Gulf Coast, the third deepest in the United States, and the fourth deepest in the world. It is the sixth well to reach 10,000 feet in South Louisiana, this area having become one of the deepest drilling districts in the world in a very short time. Only 18 wells have been drilled to 10,000 feet, and of this total one third are in Louisiana. This area looms as the center of deep drilling operations. The deepest well ever drilled was Gulf Oil Corporation's McElroy 103, which finally was abandoned at 12,786 feet. This well was located in West Texas. Other wells that have attained a greater depth than Continental Oil Company's Alvin Hebert 1 are: General Petroleum Corporation's Berry 1, Kern County, California, test that was drilled to 11,377 feet; Denver Producing & Refining Company's A-Dah-Noe 1, Caddo County, Oklahoma, well that was drilled to 11,230 feet; and Credit Minier S. A. R., Chitorani 1, Ploesti, Rumania, which was abandoned at 11,092 feet.

Other wells in South Louisiana that were drilled to a depth of 10,000 feet or greater were: Superior Oil Producing Company's and Pure Oil Company's Martinez 1, Bosco test that was drilled to 10,002 feet; Shell Petroleum Corporation's Jarnigan 1, Roanoke well that stopped at 10,001 feet; Humble Oil & Refining Company's Thomas 1, another Roanoke test that was drilled to 10,583 feet; Superior Oil Producing Company's Duplantier Community 1, East Baton Rouge well that stopped at 10,360 feet; and Shell Petroleum Corporation's Realty Company 1, deep Terrebonne Parish test that was drilled to 10,157 feet.

The 7-inch casing now being run in Alvin Hebert 1 will be the longest full string of any size ever landed. It is believed that no trouble will be experienced in running and cementing the record string at 10,950 feet.

The great thickness of sediments along the Louisiana coast line and unusual drilling conditions below 10,000 feet offer possibilities for development of commercial oil production at record depths.

New Proration Law

CONSERVATION OFFICIALS GET WIDE DISCRETION IN LOUISIANA

WEEKLY STAFF REPORT

Shreveport.—Louisiana's new proration law enacted by the legislature which last week completed its regular 60-day biennial session is expected to have a great deal to do with the development of the Louisiana side of the Rodessa field now entering its second year as an oil producing territory.

The new statute to a large degree is patterned after that of New Mexico except that it gives a great deal of discretionary power to the conservation commissioner. Among matters left largely to the discretion of this official is the defining and preventing of waste both on the surface and underground; spacing of wells; preventing excessive drilling of more tests than necessary to reasonably drain oil and gas from the reservoir; and the pooling or unitizing of small holdings for drilling whether owners agree or not, the commissioner having the power to fix proper costs, including a reasonable charge for supervision.

Rodessa had a quiet week from an operating standpoint during the seven-day period ending Wednesday, July 15. There were 40 tests drilling on the Louisiana side of the field on that date with 15 tests drilling on the Texas side.

There were only 4 new wells completed, all on the Louisiana side of the field. H. W. Snowden's Phillips 1, Section 23-23n-16w, townsite well, was a disappointment. After 3000 gallons of acid was used at 5996 feet the well was completed flowing only 4 barrels of distillate per hour through 3/16-inch tubing choke, the gravity being 64.8 degrees, and making an estimated 5 million cubic feet of gas daily. Tubing pressure was 1350 pounds and casing pressure, 1400 pounds. United Gas Public Service Company's Miller 4, Section 14-23n-16w, was completed at 5952 feet flowing 30 barrels per hour through ½-inch tubing choke with pressure 150 pounds and casing pressure 200 pounds. The same company's Pitts A-8, in the same section, was completed flowing 16 barrels per hour through ¼-inch tubing choke at 6085 feet with tubing pressure 1550 pounds and casing pressure, 1580 pounds. The same company's Rodessa 23, Section 23-23n-16w, was completed at 6000 feet flowing 26 barrels per hour through ¼-inch tubing choke with casing pressure 300 pounds and tubing pressure 400 pounds.

In the 4-mile southwest offshoot of the field, United Production Corporation's Tyson A-2, J. H. Rives Survey, was testing at 6050 feet. The well flowing into pits had not been accurately gauged with casing pressure 600 pounds and tubing pressure 300 pounds. Elevation is 274 feet. Two and three eighths-inch casing was cemented at 6015 feet. The same company's Tyson A-1, in the same survey, completed the week before turned to practically a gas well and was killed at 6065 feet and is having oil circulated in an effort to restore the oil production. The well had an initial production of 6 barrels per hour through 3/16-inch tubing choke and with elevation 284 feet logged top of the Hill at 5709 feet, top of the Gloyd at 5818 feet, top of the Dees at 5975 feet and top of the Dees saturation at 6007 feet. The Dees around the flanks of the field has produced some oil but on the higher part of the structure is the lowest of the three gas producing sands.

Lacey and associates' Bauguss 1, J. H. Rives Survey, a west edge test, is reaming at 6003 feet and with elevation of 258 feet logged top of the Hill sand at 5636 feet.

Another outpost test in Cass County, reaming to bottom at 5966 feet is Marathon Oil Company's R. P. Willis 1, S. F. & I. S. W. Survey, which with elevation of 199 feet, logged top of the anhydrite at 5024 feet, topped massive anhydrite at 5307 feet and topped the Gloyd at 5795 feet.

Showers and Moncrief's Stallcup 1, J. Davenport Survey, is waiting on 7-inch casing cemented at 5977 feet, with total depth of 6006 feet.

United Production Corporation announced 5 new locations on the 61-acre Stewart tract, John Collum Survey, Nos. 2, 3, 4, 5 and 6. It also announced locations for F. S. Simpson 3, James Young Survey, Jones 1, and Givins 1, John Collum Survey, all in Cass County.

On the Louisiana side of the field 6 new locations were announced as follows: Phillips Petroleum Company's Cora Wood 1, NE NE 17-23n-15w; W. A. Thorpe's Tyson 1, SE NW 22-23n-16w; American Liberty Oil Company's

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SHREVEPORT, LOUISIANA

Lake Charles—Houma—Converse
Rodessa—Monroe—Turnertown
Greggton

W. D. Norton 2, SE SE 17-23n-15w; Phillips Petroleum Company's Interstate 1, SW NE NW 16-23n-15w; Lion Oil Refining Company's Wynn 2, SE SE 9-23n-15w, an east outpost location; and United Gas Public Service Company's Thomas Unit 7, NE NE SE 22-23n-16w.

Forty-one wells in the Rodessa field, 40 on the Louisiana side, are showing salt water. The single well on the Cass County side showing water is United Production Corporation's Jones 1, which is showing only .07 percent of water. One month ago there were 27 wells showing water.

The fact that water intrusion is not confined to the lower side of the Rodessa structure but is becoming more evident on the high side is laid to faulting.

Magnolia Petroleum Company last week formally took over the properties in and around the Rodessa field which it acquired several weeks ago from R. W. Norton, who discovered the Rodessa gas field in August, 1930. Formal transfer of the property under terms of the contract of sale was to take place by July 15 and the intervening time was spent in checking of titles and other detailed matters. The drilling reports for July 14 showed the Norton operations transferred to that of Magnolia Petroleum Company.

Sligo Salt Water

Possibilities of oil production well down the southwest flank of the Sligo gas field, Bossier Parish, in the Pettit sand in the Glen Rose below the Anhydrite at 5300 feet, were given a setback last week when United Gas Public Service Company's H. L. Skannal D-1, NE NE 22-17n-12w, swabbed salt water at 5315 feet. Two other tests are drilling on this southwest flank in search of oil, one being in Section 22-17n-12, and the other in Section 23-17n-12w.

United's test checked 124 feet lower on top of the sand than Producers Oil & Gas Company's Pettit 1, Section 17-17n-11w, discovery distillate-gas producer of the 5300-foot horizon but it had shown gas before casing was cemented and a gas-distillate producer had been expected. Elevation was 186 feet. Seven-inch casing was cemented at 5310 feet.

Wildcats

Gulf Oil Corporation last week made location for a 5500-foot test to the Glen Rose in E. P. Hatcher 1, located 660 feet north and east SWc SE 11-17n-15w, Caddo Parish, a few miles southwest of the city limits of Shreveport. Rig is being moved in. If 5500 feet does not go at least 300 feet below the last anhydrite then the hole is to be continued to that depth. This location is on a geophysical high and is regarded as one of the most promising Glen Rose wildcat locations made in some time in North Louisiana.

In Bienville Parish this same company is reported to have acquired a large block assembled in township 14 north, range 7 west by Leon Russ of Dallas, and a stipulation is carried to drill a 6000-foot test before September 1, 1937. This company already had considerable acreage in this general area and also recently acquired over 700 acres additional acreage in township 18 north, ranges 7 and 8 west.

In Bossier Parish, Burks White is leasing in township 21 north, ranges 12 and 13 west. In Franklin Parish, J. E. Holt of Epps, Louisiana, has leased 29,000 acres from the Wyatt Lumber Company in townships 13, 14, 15 and 16 north, ranges 6, 7 and 8 east, which probably will be given an early seismograph survey. In the same parish, L. M. Calhoun has leased 20,000 acres in townships 11 and 12 north, ranges 8 and 9 east with a provision to spud a 4500-foot test by next December 15. Franklin Parish is feeling the effects of the Permian lime "trend play" from Snow Hill, Ouachita County, Arkansas.

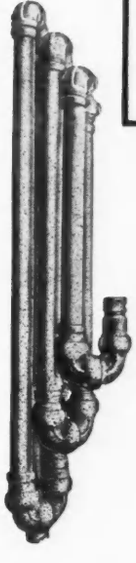
Much interest is being shown in the 6000-foot test spudded last week in Morehouse Parish by Henry E. Ron-

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH, (Rodessa)—		
H. W. Snowden, Phillips 1, 23-23n-16w	400	5996
United Gas Pub. Serv. Co., Miller 4, 14-23n-16w	2000	5952
Pitts A-8, 14-23n-16w	2000	6085
Rodessa 23, 23-23n-16w	3000	6000

*Failures; †Junked; ¶Million cu. ft. gas.

Louder... *please!*



The first telephones left much to be desired in the way of performance but no one will deny their place in business today.

Similarly the first all steel rotary hoses were incapable of the best performance because of their bulk, weight and lack of flexibility. But Chiksan has eliminated the bugaboos of all steel hoses. Today you'll find the new 4½ Chiksan all steel rotary hose weighs only 1050 lbs; lighter than other hose of equal size. Flexibility is guaranteed by improved swivels (17 of them in a 50-foot 4" hose) having two sets of ball bearings each. Safety factor is constant from year to year. Economy assured—some hoses already have produced 100,000 feet of hole.

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COMPACT—Easily folded for transportation into 8 ft. lengths. A modern up to the minute hose for progressive drillers!

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deau et al in Section 10-20n-7e, the first test to spud in the northeast part of Louisiana in the Permian lime "play." Rondeau had this block under lease and location made before the Permian lime gas discovery at Snow Hill.

Lyons & Neely of Shreveport may drill a deep test on their 9000 acres in township 21 north, range 2 west, Union Parish. Sun Oil Company has approximately 1000 acres in this vicinity.

J. C. Sellwood has acquired the west half of SE NW 20-18n-8w, Webster Parish, on the north flank of the Sibley "high" from J. P. Evans who recently opened a new field in Section 35-18n-9w, at 5589 feet in the Gloyd zone of the Glen Rose with a gas-distillate producer at 5589 feet.

Geophysical Work

East Texas border counties are still the scene of considerable geophysical exploration, some of it continuing in the southwest Rodessa trend and some of it stretching farther south toward the southwest flank of the Sabine Uplift.

In Marion County, eight miles west of Jefferson, Amerada Petroleum Corporation has a crew shooting in the J. Earp and M. H. Usery Surveys. In Cass County, northwest of Douglassville, Hugh J. Wilder of Tyler, Texas, has recently been taking some leases in the Commodore Collier, S. F. Moore, E. Bancroft and John Myers Surveys.

In Panola County, Devonian Oil Company has leased 5000 acres near Beckville, and in the central part of the same county, Sun Oil Company is adding to its holdings. Shell Petroleum Corporation has a shooting crew working south of Carthage, the county seat, and Sinclair Oil Company has a shooting crew east of the Sabine River near the Harrison County line.

In this county, Gulf Oil Corporation last week made location for Pierce and Chesbro 1, J. H. Shahan Survey.

In Shelby County, south of Teneha, around the D. F. T. Yordt Survey, Pure Oil Company has a shooting crew at work.

In Harrison County, southwest of Marshall, along the Sabine River, W. G. Savage of Houston, Texas, has taken approximately 500 acres of checker-boarded leases. In the Waskom shallow gas field in the eastern part of Harrison County, Arkansas-Louisiana Gas Company has a seismograph unit checking previous work in that locality.

NORTH LIMIT

Two failures recorded in Snow Hill district

WEEKLY STAFF REPORT

El Dorado, Ark.—The northern limits of gas-distillate production at top of the Permian lime at Snow Hill was definitely set last week when Proetz & Brown's Calion Lumber Company 1, SE SW 22-15-15, Ouachita County, was abandoned after showing 1200 feet of salt water in a 13-minute drill stem test from 4948 to 4958 feet in 10 feet of porous oolitic lime which had shown saturation when cored.

Lion Oil Refining Company's Reynolds-Berg 1, Section 28-15-15, after coring hard dense lime at 5233-45 feet plugged back to 5029 feet where electrical tester was run and 9⅝-inch casing was cemented at 4990 feet. Lime was topped in this test at 4792 feet; elevation is 105 feet. In the same section Phillips Petroleum Company has cemented 9⅝-inch casing at 4789 feet after topping the Permian lime at 4798 feet.

Appearance of salt water in the above completions which had the effect of holding up temporarily at least the drilling campaign on a wide scale there until some of the drilling operations could penetrate well into the 800-foot thick Permian lime, has not by any means halted geophysical and geological exploration in South Arkansas and Northeast Louisiana.

In Ashley County, H. L. Hunt, Incorporated, has completed assembly of a checker-boarded 4000-acre block in townships 17 and 18, ranges 8 and 9. In Columbia County, west of the Permian lime "trend play," Shell Petroleum Corporation has secured a 90-day shooting option on a 6000-acre block assembled by Rains & Tally in township 18, range 19. In Miller County, northeast of Fouke, Erwin & Leach have a 10,000-acre block centering in Section 7-17-25, which Superior Oil Company is reported negotiating for. Benedum & Trees Oil Company has completed a seismograph check of a 15,000-acre block in Ouachita County near Stephens and on which it drilled a test in Section 29-14-19 to 5245 feet last year penetrating the Travis Peak for a reported distance of approximately 3000 feet. This was drilled before the Permian lime discovery which caused the seismograph survey. This company recently has begun taking up open tracts in that area.

Phillips Petroleum Company, discoverers of the Permian lime gas-distillate production at Snow Hill, plan a 4000-foot test probably in or near Section 17-18-17, Union County, where they have been leasing and where they have under geophysical option a large amount of acreage owned by Murphy Land Company. While the drilling obligation is only 4000 feet it is reported the hole will be drilled to that depth in such shape that it could be taken to 7500 feet.

Federal Petroleum Company has stationed a geologist at El Dorado and Mid-Continent Petroleum Company of Tulsa has sent a geophysical party and a land man to El Dorado. Root Petroleum Company has sent a geophysical party to Hope, Arkansas, Hempstead County.

ARKANSAS

Completions

Company, Well and Location		Init. Prod. Bbls.	Depth
CALHOUN COUNTY—			
Proetz & Brown, Calion Lbr. Co. 1, 22-15-15	*		....
DALLAS COUNTY—			
Kel-Mac Land & Roy. Co., Owens 2, 26-10-16	*		1925
HEMPSTEAD COUNTY—			
May & Easton, Conway 1, 20-12-27.	*		2862
OUACHITA COUNTY, (Snow Hill)—			
Standard, Reynolds B-3, 27-15-15....	67		4912

*Failures; †Junked; ¶Million cu. ft. gas.

NOTICE TO OIL AND GAS WELL DRILLERS

Notice is hereby given that pursuant to Senate Bill No. 416, enacted by the Regular Session of the Mississippi Legislature of 1936, the State Mineral Lease Commission will until 10 o'clock A.M., on Friday, July 31st, 1936, receive sealed bids or proposals for contract on the following work or projects, as authorized in said Senate Bill, to-wit:

1. **For the drilling of three (3) gas wells on the old insane hospital lands, located in or near Jackson, in Hinds County, Mississippi, said wells to be drilled according to plans, specifications and requirements now on file in the office of the State Oil and Gas Supervisor.**
2. **For the drilling of one well to be in the nature of a deep test for oil on said property, as authorized and contemplated by said Act. No plans and specifications are provided or available for the drilling of said test oil well and all bidders are authorized to submit their bid or proposal, or more than one such bid or proposal, if desired, in such form and under such terms and conditions as may appear advisable and proper for carrying out the terms, purposes and conditions of said Senate Bill 416.**

The Commission expressly reserves the right to reject any and all bids received at said time and place, both on the gas wells and the oil well.

For further information in this regard, address H. N. Toler, State Oil and Gas Supervisor, New Capitol, Jackson, Mississippi.

This the 7th day of July, 1936.

STATE MINERAL LEASE COMMISSION
By Greek L. Rice, Attorney General, Secretary.

MISSISSIPPI

Jackson, Miss.—The Mississippi State Mineral Lease Commission has advertised for bids to be received until 10 a. m. Friday, July 31, for the drilling of 3 tests for gas and 1 for oil on a 1320-acre tract the state owns in the northern part of the Jackson gas field, in Hinds County, location of the state insane asylum. Plans, specifications and requirements are on file with the State Oil and Gas Supervisor. Wells are to be spudded within 20 days of signing of contract and completed within 60 days.

One new location, a wildcat in Yalo Busha County, north Mississippi, was announced last week by W. S. Biles and associates of Memphis, Tennessee. The test is W. C. Bryant 1, S½ NE SW 21-24n-6e; elevation is 276 feet. Derrick is up.

The average daily production of American oil wells is only about 8 barrels. There are 250,000 wells which produce less than 1 barrel per day.

Some oil wells have been producing for more than 50 years.

Activity Resumed

13 NEW LOCATIONS AND 12 PRODUCERS IN LEA COUNTY

WEEKLY STAFF REPORT

Hobbs, N. M.—Activity in Lea County resumed its normal pace the past week with 13 new locations. During the same period there were 12 flowing producers added to the Monument, Eunice and Cooper fields. Drilling operations are now underway on nearly all the locations staked while the rig builders' unsuccessful strike tied up new work between June 10 and July 6. Monument field continues to lead in development work, having contributed 7 of the completions and 6 of the new locations last week, and has only 2 dry holes in the immediate area. These failures are on the east flank of the structure.

The southeast portion of Monument field scored a spectacular producer the past week when Anderson Prichard Production Corporation's Britt 4-A, C NW NE 7-20s-37e, flowed at the rate of 534 barrels of pipe line oil per hour, based on a 30-minute test through a 2-inch choke on 7-inch casing. The well is bottomed at 3877 feet, or 303 feet sub-sea. Assured of one of the largest natural producers in the field, the Oklahoma City owners are installing tubing to complete. Continental Oil Company and The California Company hold an over-riding royalty interest in the Britt permit.

Another prolific well was added to the east border for production southeast of the town of Monument when Shell Petroleum Corporation's J. W. Cooper 1, NW NW NE 4-20s-37e, gauged 236 barrels oil in 1½ hours via tubing after using 2000 gallons of acid in lime at 3903 feet, or 340 feet sub-sea. It was rated at 150 barrels per hour natural. Repollo Oil Company's J. H. Williams 2, north offset and the original well in this extension area, scored an initial flow of 192 barrels daily on 1-inch tubing choke from lime at 3898-3915 feet, or 347 feet sub-sea, but has not been treated with acid.

Amerada Petroleum Corporation contributed 3 of the late completions at Monument. This company's W. E. Gaither 1, C NE SE 34-19s-36e, situated on the extreme west limits of production, responded to treatment with 2000 gallons of acid with a flow of 80 barrels hourly through tubing from lime at 3950 feet, or 318 feet sub-sea. This company's State 2-P, C SW SW 29-19s-37e, gauged 473 barrels in 9 hours on 1-inch choke from lime at 3932 feet after using 2000 gallons of acid, and L. M. Lambert 2, C SW NE 6-20s-37e, tested 518 barrels in 8 hours natural, flowing through 1-inch tubing choke, with the hole bottomed at 3905 feet, or 325 feet below sea level. Empire Oil & Refining Company's State 4-E, SW SW SW 30-19s-37e, an inside location, gauged 88 barrels per hour natural through 3-inch tubing from lime at 3940 feet, with a gas/oil ratio of 700 feet per barrel.

Four new tests at Monument were authorized the past week by Gulf Oil Corporation in keeping abreast of offsets. These new locations follow: State-Martin 1, C NE SE 25-19s-36e; Geo. C. Matthews 3, C SE SE 6-20s-37e; State-Graham 6-C, C SW SE 25-19s-36e; and J. R. Phillips 2, C NE NE 31-19s-37e. Ohio Oil Company has made location for Oscar Barber 2, C NE NW 5-20s-37e. Oil Well Drilling Company, Dallas, is seeking a one quarter-mile extension for the northeast portion of the field in starting operations on P. C. Klingsmith 1, C SE SE 20-19s-37e. Continental Oil Company and The California Company's A. U. Sanderson 1, C NE SE 11-20s-36e, is a new project, and about one-half mile from nearest production on the southwest edge of the field.

An intermediate producer for the sandy-lime area to the north and south of the town of Eunice was attained the past week by Landreth Production Corporation's E. H. Grizzell 1, C SE SW 5-22s-37e, which flowed by heads at 3735 feet, or 298 feet sub-sea, then shut down to erect tankage. It is 1¾ miles south of production in the north extension area. In the latter area, Magnolia Petroleum Company's Carson 1, C NW SW 28-21s-37e, filled 3000 feet with oil in drilling to 3747 feet. Four nearby completions are making their proration allowable of 95 barrels daily. Magnolia Petroleum Company's Will Cary 1, C NE SE 21-22s-37e, located in the South Eunice sandy-lime belt, has been completed flowing 60 barrels daily after nitro shot at 3550 feet, and Tide Water Oil Company's Anna Walden 1, a north offset, averaged 135 barrels daily after shot at 3620 feet. Ohio Oil Company's Walden 1, a north offset to the latter, has rigged up.

The Cooper field, situated on a direct strike between the Jal and Eunice lime areas, received its first completion in several months, and has another test on the extreme north end in process of completion. Lease owners have been reluctant to continue development work because of the flooding of the oil horizon with sulphur water. Southern Oil Corporation and Sam Yingling's D. L. Vaughn-Conoco 1, C SW SE 15-24s-36e, responded to treatment with 2000 gallons of acid in lime at 3566-3609 feet with a flow of 27 barrels of oil per hour through three-quarter-inch choke on tubing. Skelly Oil Company's Coates 5, C NE SE 3-24s-36e, reduced gas production from 15,000,000 feet to 3,000,000 feet by installing packer on tubing at 3549 feet, with the hole bottomed at 3581 feet, or 196 feet sub sea. The porous lime was treated with 2000 gallons of acid, but results have not been determined.

Development work in the original Eunice field has been lagging for some weeks, with only two completions and four new locations on the current report. Drilling had subsided prior to the labor difficulties.

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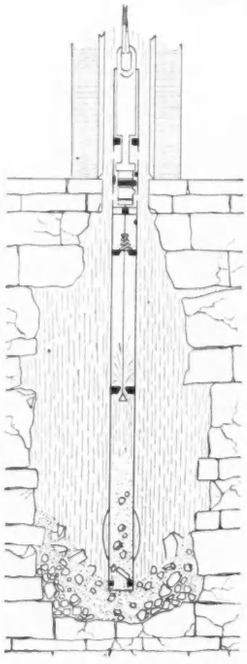

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SOUTHWEST OUTPOST MAKES 2400 BARRELS PER DAY

ROCKY MOUNTAIN FIELDS

WEEKLY STAFF REPORT

Casper, Wyo.—Continental Oil Company again comes to the front in Lance Creek oil field activity this week, completing Schuricht 1-B, CNW SE 6-35n-65w, for 2400 barrels oil daily. The well is one of the best of the recent completions and is the field's southwest outpost. It is on a 40-acre lease south of the company's Joss 4, record Lance Creek completion.

Schuricht 1 had basal Sundance saturation between 3871-91 feet and 3911-44 feet. The seven-inch casing is at 3869 feet.

Last week Continental Oil Company placed on production Apex 3 Account 2, CSE NW 34-36n-65w, which extended the Sundance limits a mile to the east. It gauged 35 barrels an hour; depth was at 4026 feet. The sand was topped at 4019 feet with the 8⅝-inch casing set at 4012 feet.

The same company's Otto Rohloff 7, CNE SW 32-36n-65w, Lance Creek, is moving in rotary and Schuricht 1-A-3, CSW NW 5-35n-65w, is drilling at 3476 feet.

Official gauging of Ohio Oil Company's Lamb 8 Account 2, CSW NE 5-35n-65w, Lance Creek, is awaiting erection of additional tankage. On a test several days ago the well flowed at the rate of 40 barrels an hour before it had cleaned itself. Hole bottoms at 4047 feet in the red beds, with seven-inch production casing set at 3947 feet. Sundance saturation was cored from 3951-4045 feet.

Ohio Oil Company's Carrie Putnam 5, CNW SW 33-36n-65w, in the same field, is waiting on cement to set around the 9⅞-inch surface string to 200 feet.

After a light shot of nitro glycerine in the basal Sundance at 3941-97 feet, Argo Oil Company's Elliott 7, CNE SW 5-36n-65w, Lance Creek field, pumped at the rate of eight barrels per hour. This is practically the same production that was developed before shot. After the well is cleaned it is believed that pumping will improve to around 250 barrels daily. Depth is at 4007 feet.

MacKinnie Oil & Drilling Company's Mary Thompson 1, NE SW NE 7-35n-65w, south extension test to Sundance pool at Lance Creek is drilling at 3200 feet and is reported to have topped the Dakota sand.

In West Mule Creek field, Niobrara County, Chester Oil Company's 1, NE NE NE 14-39n-61w, is drilling at 780 feet.

Two wildcat tests to the Sundance formation in the southern part of the state were spotted. Ohio Oil Company is moving in equipment for a test of the Laramie structure, eight miles west of Laramie, Albany County. The test is Elizabeth Stiles 1, SWC 12-15n-75w.

On East Allen Lake Dome, the Medicine Bow Oil Company's Hintze Government 1, CNE SE 18-22n-78w, Carbon County, is a location.

Ohio Oil Company recompleted Baker 1, NW NW SW 2-23n-79w, on Oil Springs structure, Carbon County, for 60,000 cubic feet of gas daily at plugged depth of 560 feet in the Frontier after cleaning out to 1499 feet. This well had been abandoned several years when rig burned down.

Oil and gas saturation has been encountered in California Company and the Ohio Oil Company's Union Pacific 2, CNE NE 35-21n-79w, Big Medicine Bow field, Carbon County, at 3070 feet in the Sundance. Several attempts have been made to take a drill stem test of the well, but due to the softness of the sand the drill stem test seat would not hold. The same companies' Union Pacific 3, CNE SE 23-21n-79w, Big Medicine Bow field, is drilling in the Morrison formation at 5254 feet, nearing critical depth.

In Rock River field, Carbon County, Ohio Oil Company is starting another deepening operation to the Sundance sand. State 4, SWc NE NE 34-20n-78w, is being rigged up to deepen from 3070 feet in the Dakota, where it completed in 1920 for 1200 barrels oil daily. Ohio's Diamond Cattle Company, N 35-20n-78w, Rock River, is drilling at 2638 feet.

Northern Wyoming

Several wells near completion in the northern Wyoming oil fields. The California Exploration Company is preparing to test Government 2, NW SW NW 7-44n-98w, Waugh Dome field, Hot Springs County. The Embar lime with saturation topped at 3890 feet. The 6⅝-inch casing set at 4040 feet shot with perforator gun. Water was encountered in the Tensleep sand at 4545 feet, total depth, and the well was plugged back. It was tested by stages up to 4040 feet.

Peter Evanoff's McAllister 1, Lot 40, NW NE SE 3-56n-97w, in the Byron field, Big Horn County, is preparing to run the 6¼-inch casing to 2720 feet on top of the Peay sand, where a good oil show was encountered. A showing of oil reported at around 50 barrels daily was encountered in the second Frontier at 2315-50 feet, and in the third Frontier at 2595-2629 feet a show

of oil and an estimated 4,000,000 cubic feet of gas daily, was reported.

Another well due for early completion in Byron field, is Ohio Oil Company's Robert Till 1, CSE SW 24-56n-97w, which is cementing the seven-inch string at 5255 feet, above the Embar lime topped at 5260 feet. Well will be deepened to the Sundance sand before completing. The company's Orson Vail 1, CNW NE 23-56n-97w, is drilling red beds at 3735 feet, at Byron.

Ohio's Mill Iron Cattle Company 73, NE SW 19-46n-97w, in the Grass Creek field, Hot Springs County, is rigging up cable tools and installing pumping hook-up, preparatory to drilling in to complete in the Embar lime. Embar was topped at 3840 feet, where seven-inch casing is set.

Peay Oil Company's (Crosby and Huntington's) Denio Mining and Milling Company 1, CNE NE NE 15-55n-97w, on the south fault block of Garland anticline, Big Horn County, is preparing to run 6¼-inch casing to the top of the Peay sand at 3890 feet.

Bruce C. Teeter's Government 2, SW SW SW 30-48n-90w, Hidden Dome field, Washakie County, is drilling at 1300 feet.

Recent start in the old Kirby Creek field of Freudenthal et al's 6, SE SE NE 21-43n-92w, Hot Springs County, is drilling at 310 feet.

Nelson et al's Enos 1, W Lot 7, 27-3n-1w, Pilot Butte field, Fremont County, is drilling at 836 feet.

MOUNTAIN STATES
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
GLACIER COUNTY (Cut Bank Field)—		
Lon Crumley, 1 Alloted 114, nw nw se 31-33n-5w	345	2880
Texas Co., Government 1, csw ne 17-32n-5w	50	2960
TOOLE COUNTY (East Shelby Field)—		
C. L. Smith, Halverson 1, cne se 18-33n-2e	¶2	793
WYOMING		
WESTON COUNTY (Osage Field)—		
LaFleiche Oil Co., 18, csw sw 17-46n-63w	15	852
NEW MEXICO		
LEA COUNTY, (Cooper Field)—		
Southern Oil Corp.-Sam Yingling, Vaughn-Conoco 1, c sw se 15-24s-36e	1200	3609
LEA COUNTY, (Eunice Field)—		
Conoco-California Co., M. Lockhart 5-A-18, c nw sw 18-21s-36e	3600	3935
Humble, J. D. Knox 2, c sw se 10-21s-36e	720	3852
LEA COUNTY, (South Eunice Field)—		
Magnolia, Will Cary 1, c ne se 21-22s-37e	60	3550
Tide Water, Anna Walden 1, c se ne 21-22s-37e	135	3620
LEA COUNTY, (Monument Field)—		
Amerada, W. E. Gaither 1, c ne se 34-19s-36e	2500	3950
L. M. Lambert 2, c sw ne 6-20s-37e	3000	3905
State 2-P, c sw sw 29-19s-37e	2500	3932
Conoco-California Co., J. L. Reed 2-A-3, c se ne 3-20s-36e	1500	3930
Empire O&G Co., State 4-E, c sw sw 30-19s-37e	2500	3940
Repollo Oil Co., J. R. Phillips 2-B, nw nw nw 31-19s-37e	3000	3935
Shell, J. W. Cooper 1, nw nw ne 4-20s-37e	5000	3903

*Failures; †Junked; ¶Million cu. ft. gas.

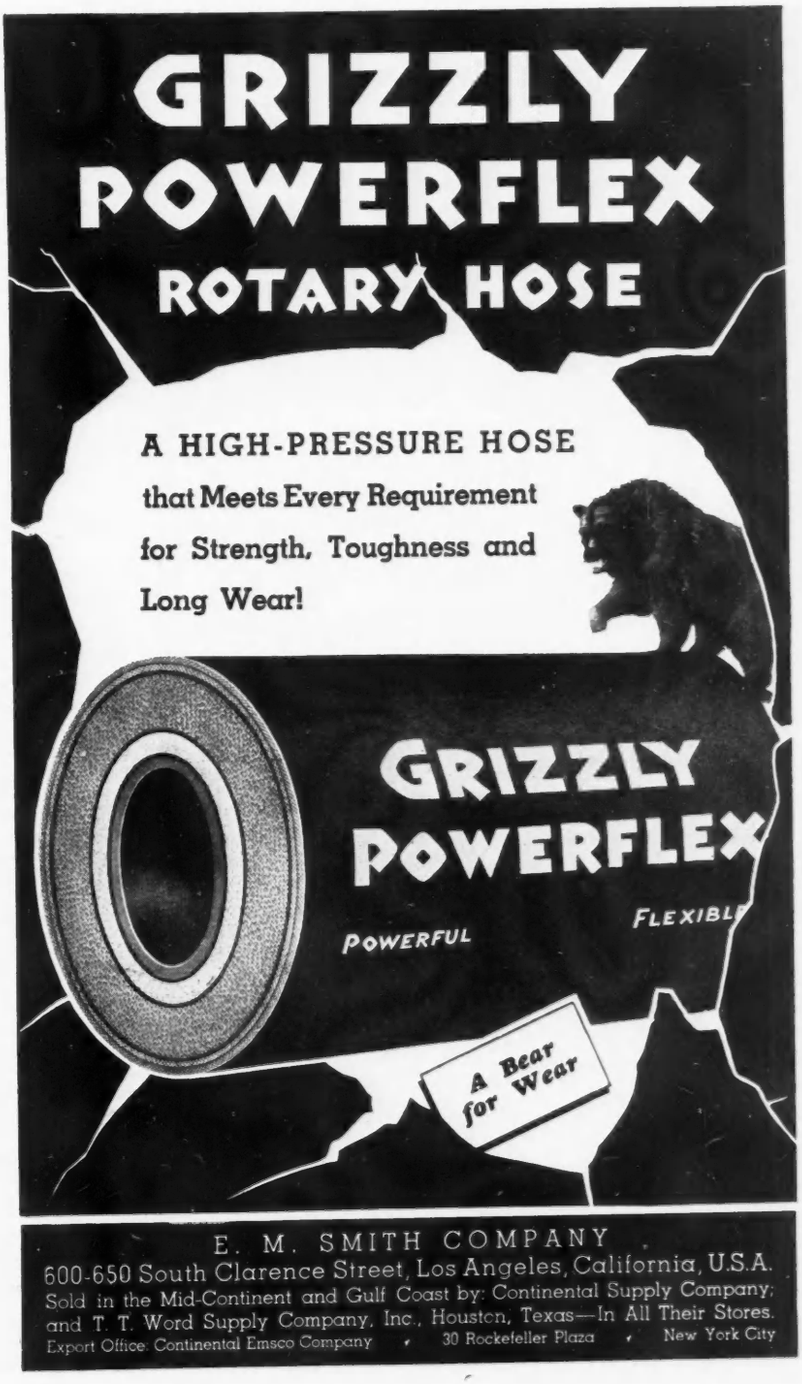
Mountain Fuel Supply Company's operations in the tri-state area are making good progress. Allen 1, NE SW SE 32-12n-97w, Power Wash gas structure, Moffat County, northwestern Colorado, spudded in and is drilling at 209 feet. In Clay Basin gas field, Daggett County, northeastern Utah, the same company's State 1, NW SE SW 16-3n-24e, is drilling at 921 feet with the 12½-inch surface string set at 398 feet. Mountain Fuel's W. T. Nightengale 1, SW NE NW 32-16n-104w, an extension test a quarter of a mile southwest of the nearest gas well in the South Baxter Basin gas field, Sweetwater County, Southwestern Wyoming, is drilling at 1586 feet.

THREE NEW TESTS
Cut Bank announces scattered locations

Cut Bank, Mont.—Three producers were completed and three new wells were spotted in the Cut Bank field, Glacier County, northern Montana, this week.

H. R. Patterson placed a good well on production when Miller 1, NE NE 1-33n-6w, swabbed 241 barrels in the first 24 hours from 2885 feet.

One of the few dry holes for Cut Bank field was seen this week when the Montana Power Gas Company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abandoned Mueller 1, SE SE 7-35n-5w, at 2945 feet.

Montana Power Gas Company's Winkler 1, SE SE 28-33n-5w, will make a 50-barrel well. Oil rose 1800 feet in the hole from 2951 feet.

Par Oil Company's Haines 7, NW SW SW 2-34n-6w, will make 35 barrels oil daily on the pump at 2882 feet.

New locations include: Bodman Agt.'s Government 1, SW SE 14-36n-6w; A. E. Crumely's 1 A1 112, CSW SW 6-32-5w; and Montana Power Gas Company's Miller 2, SW SE NW 32-33n-5w.

Wm. Fulton is plugging and abandoning S. Price 1, SW NE NE 18-27n-4w, in the Pondera field, Pondera County, at 2049 feet.

In the same field Warren Hastings is installing pump unit at 1990 feet for Erickson 2, NW SW NW 10-27n-4w, and his Erickson 3, NW NW NW 10-27n-4w, is rigging up.

ROSECRANS TEST

Los Angeles.—When formation tester was run to 5883 feet in Republic Petroleum Company's Republic-trust 1, Section 18-3s-13, night of July 13, it showed some oil and about an equal amount of fresh water. This test is on the west edge of the central portion of the Rosecrans field near Los Angeles, and is being watched closer than any other test in Los Angeles Basin. Well was drilled to 5955 feet, and the drill stopped in shale after passing through 72 feet of oil bearing zone, 55 feet of which was oil sand. It is possible it will be drilled deeper for further tests.

Best Completion

"77" ZONE WELL FLOWS 3890 BARRELS PER DAY

CALIFORNIA

WEEKLY STAFF REPORT

Los Angeles.—Shell Oil Company's Edison 29, Ventura Avenue field, was completed July 7 flowing 502 barrels an hour of 29.6 gravity oil cutting 6.6 percent, and 2,740,000 cubic feet of gas. Flow was through 23/64-inch choke with tubing and casing pressures of 680 pounds and 480 pounds, respectively. July 8 the well flowed 3890 barrels of 31.4 gravity oil cutting 0.1 percent, with 3,600,000 cubic feet of gas. Tubing and casing pressures were 180 pounds and 1250 pounds, respectively, and flow was through a one-inch choke. This well is the twelfth producer from the "77" zone and is the field's best completion in several years.

Union Oil Company's Tribe 11, about 20 miles north of Bakersfield, was completed July 8 pumping 207 barrels in 21 hours of 15.9 gravity oil cutting 4.2 percent. Present production is 110 barrels a day of 16 gravity oil cutting 4.2 percent. This well is located about one-half mile south of the previous productive limits of Mount Poso oil field in Section 28-27s-28e and is considered to have proved up most of the area lying between it and the main part of the field. Accumulation in this field is in Miocene sands against the western or valleyward side of the Mount Poso fault which closely coincides with the east lines of Sections 16, 21 and 28 through the southern half of the field.

DeAugustine-Abrams-Daly Oil Company's Barnett 1, about 35 miles east of Los Angeles and at the southeast edge of the East Coyote field in Orange County, has been cored to 2811 feet in shale with streaks of oil sand, and 8⅝-inch casing is being run to 2743 feet. The formation tester was

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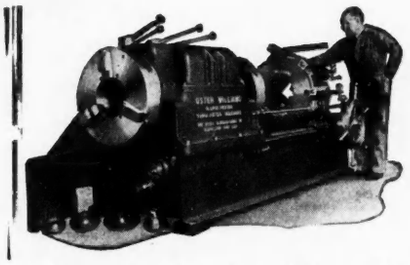

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set with the packer at 2743 feet and the valve was open for 7 minutes. During that interval 170 feet of drilling fluid and 1100 feet of oil entered the drill pipe and was recovered. According to reports, a great deal of difficulty is had in correlating this well with Continental Oil Company's Carlton Community 1, located 1500 feet to the east, which was drilled to 4796 feet and abandoned. As nearly as correlations can be drawn with the data available, the Continental well is about 200 feet structurally higher than Barnett 1. It is probable that Barnett 1 is on the down-thrown side of a cross fault passing between these two wells.

Another Terminal Location

General Petroleum Corporation has announced a tentative location for Terminal 2 as approximately 600 feet north from Terminal 1 well at Wilmington in the Los Angeles Harbor district. Terminal 1, considered the most important wildcat well in the Los Angeles basin, has twice developed commercial production on tests, once when bottomed at 2694 feet, and again when bottomed at 3019 feet. The well is being cored ahead at 3593 feet in sand and shale. June 11, on the first of the above tests, the well produced 86 barrels a day of 13.2 gravity oil cutting 12 percent. On the second test, June 22, the well flowed 200 barrels a day of 18.2 gravity oil cutting 2.8 percent.

Union Oil Company's Battles 1, Adam area, five miles north of Santa Maria, Santa Barbara County, was completed at 2738 feet July 6, pumping 175 barrels of 16.2 gravity oil, cutting 6 percent in 16 hours. Present production is 335 barrels in 22 hours net of 16.3 gravity oil cutting 2.2 percent, with 46,000 cubic feet of gas. Casing pressure is 325 pounds.

Production in the Adam area is from fractures in the lower portion of the Monterey shale (middle Miocene), which unconformably overlies the Franciscan metamorphics (Jurassic). This well is 660 feet south from Union Oil Company's Adam 1, discovery well of the area, which was completed April 1 flowing 2376 barrels a day of 16.4 gravity oil and 400,000 cubic feet of gas.

R. R. Bush Oil Company has staked a location in the same area for Hancock-Bush-Brown 1 at about one-half mile south and one-quarter mile west from Adam 1, above. Rig is being skidded to this location from R. R. Bush Oil Company's Hancock-Bush-Enos 1, Section 13-10n-34w, which was recently abandoned at 1901 feet. The Monterey was absent in this well between the Sisquoc (Pliocene) and the Franciscan. The new location will probably be down the dip relative to Adam 1, with a possibility of finding a greatly thickened Monterey formation.

St. Helens Petroleum Company, Limited's P. & B. 7 in Montebello field, 15 miles east of Los Angeles, was completed July 5 flowing 100 barrels an hour of 38 gravity oil cutting less than one percent. July 6 the well flowed 106 barrels an hour of 37.9 gravity clean oil and 1,700,000 cubic feet of gas. Present production is 1555 barrels a day of oil and 1,745,000 cubic feet of gas through 53/64-inch choke, with tubing and casing pressures of 310 pounds and 1000 pounds, respectively. Gasoline content of the gas is estimated at 2¼ gallons per thousand cubic feet. Depth is 5585 feet, with nine-inch water string cemented at 5465 feet, 180 feet of five-inch perforated liner landed at 5585 feet, and 2½-inch tubing hung at 5375 feet. This production is from the upper Nutt zone.

Shell Oil Company's Branch 1, about 150 miles south of San Francisco at West Pleyto, Monterey County, is standing after several unsuccessful tests of various formation intervals. Depth is 8994 feet, and it is reported that the bottom of the hole is in granite. Operator has plugged back and tested in several stages. On the latest test, made with the 2½-inch tubing hung at 8300 feet, the well flowed water.

Eastern Oil Company's Eastern 1, outpost well at the east edge of Playa del Rey field, 15 miles west of Los Angeles, has been killed and the liner is being pulled. Operator plans to clean out and to scrape the walls of the hole. Another core or two may be taken before the liner is re-run. The liner will be cemented through perforations at the base of the nodular shale at 7398 feet before returning the well to production.

CALIFORNIA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTEBELLO—		
St. Helens Pet. Co., P&B 7	1555	5585
PUENTE—		
Numac Oil Co., Rowland 1	22	2545
REDONDO—		
Continental Royalties, No. 1	180	3518
KETTLEMAN HILLS—		
Kettleman No. Dome Assn. No. 36-36Q	390	9733
Standard Oil Co., No. 78-29J	1190	8185
EDISON—		
Union, Reese 1	90	1463
Wood-Callahan Oil Co., Gerard 2	300	2073
FRUITVALE—		
Mohawk Pet. Co., Bowman 1	85	3420
Nydia Pet. Co., Ticehurst 1	75	3624
KERN FRONT—		
C. C. M. Oil Co., No. 57	175	2140
General, Young 48	240	2050
MOUNT POSO—		
Union, Tribe 11	130	1778
MOUNTAIN VIEW—		
Shell, Porter two-8	1050	5879
MIDWAY—		
Ohio, Premier 11	285	2777
ROUND MOUNTAIN—		
Barnsdall Oil Co., Caldwell 8	245	1964
Honolulu Oil Corp., No. 18-11	190	1827
Shell, Caldwell 13	300	1895
SANTA MARIA—		
Union, Battles 1	335	2738
R. R. Bush Oil Co., Hancock-Bush 1	*	1901
VENTURA AVENUE—		
Associated, Lloyd 99	275	7050
Shell, Edison 29	3890	8110

*Failures; †Junked; ¶Million cu. ft. gas.

DUNDEE SHOWING
May open needed new production

MICHIGAN WEEKLY STAFF REPORT

Mt. Pleasant, Mich. — Goll, Graves, Mechling's Oard 1, SW SW SE 18n-1w-25, showed oil and gas 69 feet in the Dundee lime, topped at 2496 feet, and was shut down on July 14 for tankage. Bailer tests indicated between 300 and 400 feet of oil in the 5 3/16-inch cased hole. The test is eight miles east and two miles north of a Dundee oil pool in Beaverton township, 17n-2w, Gladwin County.

The showing was regarded as the most important development in Michigan for weeks with the possibility of a much needed new oil reserve.

Dr. Virgil R. D. Kirkham continued to

MICHIGAN
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GRATIOT COUNTY—		
Harley Williams, Smith 1, se sw ne 9n-2w-29	*	2922
MECOSTA COUNTY—		
Gordon Oil Co., Taylor 1, c ne nw, 13n-8w-25	¶434	1320
MIDLAND COUNTY—		
Pure, Alspaugh 3, c n se nw, 13n-2w-2	200	3434
Reed B 3, c s nw sw, 13n-2w-1	110	3440
MONTCALM COUNTY—		
Midland Petrol, Dawes 1, c sw nw, 12n-7w-4	¶38	1318
Cornell 3, c nw sw, 12n-7w-4	¶64	1315
R. F. Voorhee, Love 1, c se se 12n-7w-9	¶15	1260
Wolverine Gas Co., Lumbert 1, c nw nw, 12n-7w-11	¶55	1299
D. F. Jones, Jones 1, c ne sw, 12n-7w-11	¶49	1264
Cryden Oil Co., Hustead 4, nw se nw, 10n-5w-2	100	3189
Hustead 5, sw ne nw-10n-5w-2	190	3196
OGEMAW COUNTY—		
Melling Oil Co., State 8, se sw nw, 21n-3e-6	75	2611
Kinwell Oil Co., Harper 1, ne se se, 22n-2e-19	65	2738
ST. CLAIR COUNTY—		
William Marlow, Ernest 1, sw sw nw, 8n-16e-27	*	1350

*Failures; †Junked; ¶Million cu. ft. gas.

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test Boyce 1, 14n-7e-24, Tuscola County, after plugging back to 2843 from 2893 feet. Two attempts to acid treat balked from casing and tubing trouble. The semi-wildcat test showed an estimated 15 barrels Dundee production on swab tests before acidizing was attempted. Dundee was logged at 2604 feet.

Harley William's Smith 1, 9n-2w-28, Gratiot County, logged Dundee lime at 2893 feet, showed water at 2915 feet and was bottomed at 2922 feet and will be abandoned. It is in wildcat territory.

It is estimated that the average motor vehicle consumes more than 600 gallons of gasoline annually. In 1926 annual consumption was only 520 gallons.

EASTERN FIELDS

WEEKLY STAFF REPORT

Completions

OHIO

Company, Well and Location	Init. Prod. Bbls.	Depth
ASHLAND COUNTY—		
Ohio Fuel Gas Co., Young 1	¶	2815
LORAIN COUNTY—		
William Dempsey, Cotton 1	¶	2386
Schneider & Wyles, Heacock 1	*	2529
SUMMITT COUNTY—		
East Ohio Gas Co., Mathie 1	¶	3945
PERRY COUNTY—		
Ohio Fuel Gas Co., Winegardner 1	¶	2815
Hopewell Gas & Fuel, From 1	¶	2876
Ohio Fuel Gas Co., Rhoades 1	¶	3224
PUTNAM COUNTY—		
Brown & Co., Williams 1	¶	1354
WAYNE COUNTY—		
Ohio Fuel Gas Co., W. F. Nirode 1	¶	....
PERRY COUNTY—		
Mid-East Gas Co., Edward Noll 2	*	....
Wehrle Bros., Geo. F. Shrider 2	*	2911
VINTON COUNTY—		
Kelch Bros., Mary E. Geiger 3	*	1063
ASHLAND COUNTY—		
Ohio Fuel Gas Co., Stanislawska 1	¶	722
R. C. Jones, C. R. Fox 1	¶	4489
LORAIN COUNTY—		
Ohio Fuel Gas Co., Buzana 1	¶	....
STARK COUNTY—		
Lyons & Co., Ellen Bergen 1	¶	....
SUMMITT COUNTY—		
Brooks Johnson, Robert Gillie 2	*	....
HOLMES COUNTY—		
Bell Bros., G. & M. Finley 4	¶	....
FULTON COUNTY—		
M. L. Stevens, H. Vedor 1	¶	2255
SENECA COUNTY—		
Industrial Gas Co., H. J. Hoover 4	¶	490
Clem Conrod 1	¶	485
PUTNAM COUNTY—		
Brown & Co., Walter Wilhaus 1	¶	1354
WYANDOT COUNTY—		
H. Makes, Arthur Hossler 3	¶	1372
PERRY COUNTY—		
Ohio Fuel Gas Co., F. G. Rhodes 1	¶	3224
VINTON COUNTY—		
Kelch Bros., Mary E. Geiger 3	*	1074
ATHENS COUNTY—		
Joe Gage, Caroline Noyes 1	*	1120
Bowman Bros., J. W. Armstrong 2	¶	845
Paramount Gas Co., Carbondale Coal 3	5	1145
A. D. Townsend & Co., Shelton 2	¶	....
BELMONT COUNTY—		
Richland Dev. Assn., Lochray 10	¶	....
JEFFERSON COUNTY—		
E. Ferguson & Son, Galt 2	*	....
KNOX COUNTY—		
Licking Co. Bldg. & Savings Co., S. C. Brown & Co. 2	2	....
WASHINGTON COUNTY—		
Baumgard & Co., Tice 1	2	....
Metcalf & Jahn, Greenless 1	*	....

WEST VIRGINIA

CLAY COUNTY—		
Reed, Wheeler & Young, Goshorn 22	¶	....
HARRISON COUNTY—		
Lumberport Shinstown Gas, Strother 2	¶	....
WOOD COUNTY—		
H. C. Hartman & Co., Delancy 3	*	....
RITCHIE COUNTY—		
William Shroder, Hays 4	*	....
Pyle Bros., Haught 1	1	....

KENTUCKY

OHIO COUNTY—		
Petroleum Exploration, Graham 8	10	....
Kentucky Nat. Gas Co., Rogers 16	40	....
Vickers & Co., Jones 10	*	....
Teller & Co., Metcalf 2	15	....
Cane Run Petroleum Co., Bellamy 9	60	....
Kentucky Nat. Gas Co., Powers 5	8	....
F. D. Clark & Co., White 1	10	....
McLEAN COUNTY—		
Rough River Corp., Louisville Stock Land Bank 2	*	....
HENDERSON COUNTY—		
Imperial O&G Co., Freeman 4	10	....
McLEAN COUNTY—		
Hupp & Duff, Tanner 6	90	....
J. C. Miller, Henniger 3	5	....
Hupp & Kentucky Prod., Wilson 1	30	....

INDIANA

DAVIESS COUNTY—		
Albert Bechelor, Re'nsel 1	¶	687
GIBSON COUNTY—		
Euclid Oil Co., Watkins 9	50	1308
JAY COUNTY—		
Lon Wherly, Fee 1	¶	1023
VANDERBURG COUNTY—		
John L. Drake, Swope 3	*	....
SPENCER COUNTY—		
T. F. Seitz, Lorch 7	*	734
PERRY COUNTY—		
Haney & Hollingsworth, Hug 1	*	521
POSEY COUNTY—		
L. R. Henley & Co., Bruce 1	¶	....

*Failures; †Junked; ¶Million cu. ft. gas.

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ALABAMA

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 2, se nw sw 9-3n-29e, elev 191 ft dr 3767 ft.

MOBILE COUNTY—J. C. Prine's King 1, 4-1n-4w, pb arr perf & test 2500-2600 ft old td 3186 ft. Grand Bayou O&G Co.'s J. A. Stafford 1, sw sw 24-7s-3w, lcn.

ARKANSAS

BRADLEY COUNTY—Phillips Pet. Co.'s Murphy Land Co. 1, nw nw 12-17-11, elev 91 ft, core red beds and shale 4618 ft.

CALHOUN COUNTY—Ben G. Barnett's Freeman Smith 1, se nw sw 36-15-14, elev 89 ft, sd 5519 ft. Proetz & Brown's Calion Lbr. Co. 1, se sw 22-15-15, elev 94 ft, tested sw, arr abn, td 4958 ft.

CLEVELAND COUNTY—Diffie et al's L. C. Ross 1, sw ne 11-11-11, rur. R. L. Saxon's L. C. Tipton 1, sw ne 13-11-12, dk.

DALLAS COUNTY — McCall & Kelly's Owens 1, nw sw 26-10-16, owdd, td 1456 ft.

LONOKE COUNTY—J. F. Russell's Gunter 1, se se 17-5-10, lcn.

MILLER COUNTY—Deep Rock Oil Corp.'s Williams 1, nw sw nw 6-16-25, elev 232 ft, sr 4156 ft. Joiner et al's Montana Realty Co. 1, nw nw 3-17-28, elev 225 ft, co 2385 ft. King Oil Corp.'s Mann 1, nw sw 1-16-26, sd 2260 ft. McClanahan et al's Montana Lbr. Co. 1, sw sw 2-20-27, rur.

OUACHITA COUNTY—J. M. Farris' G. Dean 1, ne se nw 16-15-17, owdd, td 2907 ft. Edwin M. Jones' J. D. Reynolds A-1, sw sw 27-15-15, pits dug, sd. Edwin M. Jones, J. D. Reynolds A-2, sw sw 27-15-15, lcn; E. Murphy 1, ne ne 28-15-15, lcn; E. Murphy 2, nw ne 28-15-15, lcn. Lion O. R. Co.'s Reynolds-Berg 1, se se ne 28-15-15, elev 105 ft. Phillips Pet. Co.'s Arnold 1, ne sw 27-15-15, elev 207 ft, coring finely oolitic saturated lime 5072 ft. Phillips Pet. Co.'s Cheatham 1, sw ne 27-15-15, fsh, td 4910 ft. Phillips Pet. Co.'s Ferris 1, nw se 27-15-15, rur and sd. Phillips Pet. Co.'s L. W. Harris 1, sw ne 28-15-15, 9-in csg 4789 ft, running testing tool, td 4807 ft. Phillips Pet. Co.'s Rose 1, ne se 28-15-15, circulating, td 4819 ft. Jno. Pugh's (American-Liberty) Hildebrandt 1, se se 28-15-15, core lime 4935 ft.

UNION COUNTY—J. C. Buckbee, Tr.'s Ezzell 1, sw ne nw 13-17-15, elev 255 ft, sr 5353 ft. Mrs. Mamie McCurry et al's Slaughter 1, se se 9-17-16, co 3106 ft.

CALIFORNIA

FRESNO COUNTY

CANTUA CREEK—Mohawk Pet. Co.'s Langer 1, 30-16-15, lcn. Western Gulf Oil Co.'s S. P. L. 3, 3-17-15, dr sand and shale 7320 ft.

CURRY MOUNTAIN—Standard Oil Co.'s Camino 1, 1-21-15, td 1303 ft, twist off, fsh.

KERN COUNTY

LOST HILLS—Associated Oil Co.'s Williamson 2, td 1143 ft, producing 149 bbls net, 13.5 gravity, 26% sand.

KERN FRONT—American Explor. Co.'s No. 1, 16-28-27, td 2862 ft, to test on pump.

POSO CREEK—Bargol Oil Co.'s Bargol 1, 11-22-27, sd 3324 ft in gray sand. McAdams Oil Co.'s No. 1, 32-27-28, dr 895 ft.

SOUTH MARICOPA—E. A. Bender's Robinson 1, 14-10-23, dr shale 812 ft.

JASMINE—Cochran Oil Co.'s Bishop 1, 31-25-27, dr gray sand 2238 ft.

DEVIL'S DEN—Den Pet. Co.'s Bates 1, 20-25-19, sd 640 ft in brown shale.

JASMINE—Doyle Pet. Co.'s Quinn 1, 15-25-27, rur.

ELK HILLS—Elk Hills Pet. Co.'s No. 1, 14-31-24, dr blue clay 3344 ft.

ARVIN—General Pet. Corp.'s Swanson 1, 26-31-29, rig.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildca treports in THE OIL WEEKLY.

*—*dry hole abandoned well.*
‡—*salt water (completions).*
†—*junked and abandoned.*
•—*million feet of gas.*
abd—*abandoned.*
bbls—*barrels.*
br—*building rig.*
b.s.—*basic sediment.*
csg—*casing.*
co—*cleaning out.*
dd—*drilling deeper.*
dk—*derrick.*
dr—*drilling.*
fsg.—*fishing.*
ft—*feet.*
hfw—*hole full of water.*
in—*inches.*
lcn—*location.*
m—*milling.*
mim—*moving in materials.*
mit—*moving in tools.*
mot—*milling on tools.*
n, s, e, w—*north, south, east, west.*
oih—*oil in hole.*
owdd—*old well drilling deeper.*
owpb—*old well plugging back.*
pb—*plugged back or plugging back.*
r—*reaming.*
rog—*rig on the ground.*
rur—*rigging up rotary tools.*
rust—*rigging up standard tools.*
sd—*shut down.*
sdtr—*sidetracking.*
sg—*show gas.*
si—*shut in.*
so—*show oil.*
so & g—*show oil and gas.*
spd—*spudding.*
sr—*straight reaming.*
sw—*salt water.*
td—*total depth.*
ur—*underreaming.*
wih—*water in the hole.*
wo—*workover.*
wocs—*waiting on cement to set.*
wost—*waiting on standard rig.*

GRAPEVINE—Hall-Baker Co.'s No. 1, 12-10-19, dr 2230 ft. Ohio Oil Co.'s T. I. T. 1, 36-11-19, dr sand and shale 4354 ft. Reserve Oil & Gas Co.'s Ritchie 33-2, 33-11-19, dr shale 1407 ft; Tejon 2-6, 2-10-19, rur.

DOMINION — Modoc Pet. Co.'s Vedder-Bowles 2, 21-26-28, td 1537 ft, to test on pump. Santa Carla Oil Co.'s Bass-Goodnight 1, 19-26-28, dr brown shale 1853 ft.

MOUNTAIN VIEW — Mohawk Pet. Co.'s Earl Fruit 1, 10-31-29, dr sand and shale, also oil sand 5767 ft. Treasure Oil Co.'s Treasure 1, 12-30-28, sd 5390 ft.

STRAND—Ohio Oil Co.'s K. C. L. D-1, 1-30-25, dr sand and shale 8526 ft.

FRUITVALE—Ohio Oil Inc., No. 1, 26-29-27, rur.

NORTH BELRIDGE—Rio Grande Oil Co.'s Layman 1, 18-28-20, dr shale 1190 ft.

KERN RIVER—Seven Spot Oil Co.'s No. 1, 13-26-27, td 1228 ft, plug 1205 ft, tested on pump for 200 bbls, sanded up, co.

LOST HILLS—Standard Oil Co.'s United 1, 2-26-20, td 6887 ft, fsh.

COMANCHE POINT — Tejon Ridge Oil Co.'s Tejon 1, 23-32-29, dr blue shale 2461 ft.

SAN EMIDIO—Texas Co.'s K. C. L. C-11-49, 11-11-22, dr brown shale 7862 ft.

MISCELLANEOUS

ALAMEDA COUNTY—Seaboard Oil Co.'s Johnson 1, 13-3S-3E, rur.

HUMBOLDT COUNTY—Texas Co.'s No. 2, 22-3-1, td 4365 ft, cut 4 in. dr pipe at 4218 ft, circulating through cut.

KINGS COUNTY—Associated Oil Co.'s Avenal 1, 35-23-17, dr hard brown shale 1815 ft. Herndall & Associates' Spreckles 1, 16-24-18, td 4201 ft, plug 1985 ft, testing on pump. Trico Oil & Gas Co.'s Calif. Western 1, 7-23-23, lcn.

MADERA COUNTY—Pure Oil Co.'s Chowchilla 4, 20-10-14, dr shale 5424 ft.

MERCED COUNTY—E. R. Fantz's Cunningham 1, 22-7-16, lcn.

SAN BENITO COUNTY—Associated Oil Co.'s Murphy Ranch 1, 5-12-4, rur.

SAN JOAQUIN COUNTY—Amerada Pet. Corp.'s F. D. L. 5, 15-2-5, td 6160 ft, plug 4100 ft, co, water, to replug. Standard Oil Co.'s McDonald Island 2, 25-4-4, rig.

SOLANO COUNTY—Amerada Pet. Co.'s Hoppe 1, 22-4-2, rur. Standard Oil Co.'s Anderson 6-1, 35-4-2, lcn.

TEHAMA COUNTY — Northern Counties Pet. Co.'s Ewers-Mooney 1, 25-24-3, sd 8060 ft.

TULARE COUNTY—W. H. Fortine's Mosesian 1, 22-27-26, td 3120 ft, top of Walker zone at 2930 ft, to test.

MONTEREY COUNTY—North Dome-Cholame Hills Oil Co.'s Hillman 1, 15-24-14, rig. Shell Oil Co.'s Branch 1, 34-24-10, sd 8994 ft.

SAN LUIS OBISPO COUNTY

ARROYO GRANDE—Avila Oil Co.'s Gibson 1, 10-31-13, rur. Birch-Royer's Tatchett 1, 33-31-13, td 1840 ft, redr 1550 ft. Crail Bros.' Vedder 1, 8-32-13, spud 7/9. A. T. Jergins Trust's Roderiguez 1, 5-32-13, wocs 13-in at 750 ft, bottom; No. 2, foundation. Pismo Pet. Co.'s Scott 2, 5-32-13, foundation.

CARRIZO PLAINS—Barnsdall Oil Co.'s Wreden 1, 24-28-17, dr sand and shale 3668 ft. J. C. Theriott's Holland 1, 22-32-23, sd 2135 ft.

SANTA BARBARA COUNTY

COAL OIL POINT—Bankline Oil Co.'s No. 2, permit 191, td 5510 ft, redr 3075 ft.

LOMPOC—O. C. Fields' Santa Rita 1, 11-7-33, dr blue shale 1560 ft. Lompoc Pet. Co.'s Beauterbough 2, 18-7-34, sd 3940 ft. York Oil Co.'s York 2-A, 33-8-34, rur.

EL CAPITAN—La Canada Oil Corp.'s No. 2, 3-4-30, rig.

BETTERAVIA—E. H. Morris' Union Sugar A-1, 25-10-35, dr shale 4974 ft.

VENTURA COUNTY

BARDSDALE—Bestco Pet. Co.'s Frey 1, 2-3-19, sd 4512 ft, plug 4000 ft. Laying & Jacobs' No. 1, td 1275 ft, co. Petroleum Securities Co.'s Elkins 1, 7-3-19, sd 5627 ft; Home Ranch 3, 3-3-19, td 3899 ft, to deepen; Home Ranch 4, lcn. Union Oil Co.'s Dryden 10, 12-3-20, td 6561 ft, landed liner, perforated to test.

OXNARD—General Pet. Corp.'s McGrath 2, 26-2-35, dr hard shale 8339 ft; Padre 1, (Javon) 15-3-24, rig.

SOUTH MOUNTAIN—Honolulu Oil Corp.'s Hobson 1, 23-3-21, dr sandy shale 1194 ft.

SIMI—Jas. S. Hull's No. 1, 2-2-18, sd 1715 ft.

SESPE CANYON—Merchants Pet. Co.'s No. 1, 1-4-20, bldg tramway.

VENTURA—Ventura Explor. Co.'s Sexton 1, 30-3-22, dr sand streaks shale 8328 ft.

SOUTHERN CALIFORNIA

NEWHALL—Barnsdall Oil Co.'s Rancho S. F. 1, 26-4-17, foundation. Holbrook Pet. Corp.'s Newhall L. & F. Co. 1, 26-4-16, dr shale 860 ft.

ARTESIA—M. T. Bernstein's Millard 1, 25-3-12, td 489 ft. Milling on bit.

GARDENA—Crude Oil Dr. Co.'s No. 1, 31-3-13, rur.

TORRANCE—Eyer Pet. Co.'s No. 1, 20-4-13, sd 3794 ft. Jas. S. Hull's No. 1, 20-4-13, sd 3794 ft. Jas. S. Hull's No. 1, 20-4-13, td 4012 ft, wocs 85s in at 3875 ft.

WILMINGTON—General Pet. Corp.'s Terminal 1, dr deeper 3592 ft in sand and shale; Terminal 2, lcn. Harbor Dr. Co.'s No. 1, 33-4-13, td 3566 ft, pumping 140 bbls 17.6 gravity oil, cut 2%. Royalty Service Co.'s Banning 11-1, 28-4-13, spud 7/11.

PUENTE—Numac Oil Co.'s Rowland 2, 14-2-10, td 2545 ft, plug 2500 ft, pumping 22 bbls 20 gravity oil, cut 5%. Will drop from report.

PALOS VERDES—Pamaco Royalty Co.'s Burkhard 1, 2-5-14, rig.

ROSECRANS—Republic Pet. Co.'s Trust 1, 18-3-13, dr hard shale 5877 ft.

EL NIDO—Shell Oil Co.'s Lloyd Dabney 1, 33-3-14, dr hard sand 3400 ft.

EAST SANTA FE—Vanda Pet. Corp.'s Loftus Land 1, 4-3-11, rur.

DOMINGUEZ—West American Oil Co.'s Del Amo 1, 3-4-13, td 9000 ft, to retest.

ORANGE COUNTY — Calif. Eastern Oil Co.'s Verde 1, 35-3-9, dr hard sand and conglomerate 3960 ft. Hillman & Long's No. 1, 14-5-11, sd 7701 ft. Shell Oil Co.'s Anaheim Sugar 3-1, 7-6-10, dr sand and shale 1238 ft. Geo. Terry's Gun Club 1, 17-5-11, sd 5345 ft.

SAN BERNARDINO COUNTY—Equitable Pet. Explor. Co.'s No. 1 (Barstow), 11-10-5, dr hard brown shale 2496 ft. Melbourne Pet. Co.'s Abacherle 2, 12-3-8, rur. Tehama Pet. Co.'s Kraemer-Backs 2, 33-2-9, sd 560 ft; Pellisier 1 (Puente Hills) 4-3-8, td 565 ft, running 12½-in casing.

COLORADO

ADAMS COUNTY—Riddle Petroleum Co., Baxter 1-C, sw 2-3s-6e, dr 1300 ft, top of the Pierre at 1250 ft.

ARCHULETA COUNTY—K. L. Kendrick Crowley 1, 2-32n-1e, td 1136 ft, preparing to ur

6¼ in csg to shut off water. Oil City Petroleum Co. & Archuleta Oil & Gas Co., southwest corner lot 5, 24-33n-2e, dr 945 ft. Maryatt Drill Co., Hollywood 1, se se se 15-34n-1w, spd. Wm. E. Hughes Estate Fee 8, nw se ne 24-33n-2e, dr 400 ft.

BACA COUNTY—Paul R. Robb, Petroleum Corporation Lovettee 1, nw nw nw 24-32s-48w, dr 2055 ft.

COSTILLO COUNTY—L. R. Lane, Midwest Land & Cattle Co. 1, nw nw nw 24-31s-94w, sd after completion of validation of government permit.

LARIMER COUNTY—Continental Oil Co., Buckeye U. P. 8, cne sw 31-10n-68w, dr 3164 ft.

PARK COUNTY—South Park Oil Co., LeBert 1, ne ne nw 21-11s-75w, dr 350 ft. South Park Oil Co., Lemarr 1, ne ne se 34-11s-75w, mir.

WELD COUNTY — Continental Oil Co., State Bank of Trenton 1, csw ne 21-8n-59w, coring at 6622 ft, top of the Muddy at 6605 ft.

FLORIDA

JACKSON COUNTY — Mrs. Mamie Hammonds et al's Grandberry 1, sw sw ne 15-5n-9w, elev 124 ft, re-setting surf csg td 4385 ft red shale.

LAKE COUNTY — Oil Dev. Co. of Fla.'s Gulf Expl. Co. 2, se se 17-24s-25e, elev 120 ft coring 4575 ft white chalk (Cretaceous).

NASSAU COUNTY—St. Mary's River Oil Corp.'s Bank of Hilliard 1, 19-4n-24e, arr reset surf csg td 345 ft.

KANSAS

BARTON COUNTY—Davison et al's Birzer 1, sw se sw 22-17s-12w, td 3425 ft. Schermerhorn Oil Co.'s Hunter 1, ne ne ne 29-18s-15w, gauged 39M ft gas. Wakefield & Johnson's Bumm 1, sw ne ne 22-19s-12w, dr 3508 ft. Rosespring Drlg. et al's Rick 1, sw sw sw 1-19s-11w, rust. Brouk et al's Keil 1, se se ne 11-16s-15w, ur 8-in csg 2565 ft. Rose & Lant's Redetzke 1, ne nw nw 10-16s-11w, set 10-in csg 915 ft, co. Yarnell & Carlson's Rath 1, ne ne ne 35-18s-12w, spd.

BUTLER COUNTY—Ellis et al's Pettit 1-A, se se nw 21-28s-6e, td 3163 ft, 1000 gals acid, no test. McGinnis et al's Hinnen 1, ne ne sw 18-24s-4e, sd 2545 ft. Solomon's Church 1, sw ne se 8-28s-5e, sd 50 ft. Dalton et al's Miley 1, csw ne 17-27s-5e, sd 350 ft. Estes et al's Edgar 1, nw nw se 1-28s-8e, td 1030 ft, D&A.

CLARK COUNTY — Olson & Watchorn's Morrison 1, cse sw 17-32s-21w, dr 2655 ft.

COWLEY COUNTY—McKnabb's Community 1, cne nw 14-34s-3e, td 2674 ft, 5M gas. Morton et al's Rogers 1, se se ne 1-31s-4e, dr 1685 ft.

EDWARDS COUNTY — Stanolind-Elwell's Donovan 1, cse se 14-25s-18w, rng 6-in csg 4445 ft.

ELLIS COUNTY—Rosespring et al's Union Pacific 1, ne ne ne 9-13s-20w, dr 3771 ft. Empire's Herl 1, se se se 22-15s-19w, set 10-in csg 2775 ft, co. Parrish & Dennam's Walter 1, se sw se 14-13s-17w, td 3705 ft, D&A. Jones & Shelbourn's Gunther 1, se se sw 9-11s-19w, dr 2515 ft. Vickers Pet. Co.'s Kraus 1, sw sw nw 22-14s-19w, fsg 3565 ft. Bradley Oil et al's Penny Wann 1, se se se 13-15s-20w, td 3340 ft, rust. Empire's Samuelson 1, ne ne sw 31-11s-16w, dr 905 ft. Kansas Development Co.'s Haller 1, se se nw 10-11s-18w, td 2918 ft, rust. Bridgeport Mach's Ubert 1, ne ne nw 12-13s-18w, dr 1350 ft. Philham Oil Co.'s Gerstner 1, sw sw se 24-14s-17w, dr 1185 ft. Trigg et al's Armbrister 1, se se sw 6-11s-19w, dr 2975 ft. Wolf Creek et al's Polifka 1, sw sw ne 24-13s-18w, ru. Lario O&G Co.'s Cress 1, ne ne ne 13-11s-17w, lcn. Champlin Ref. et al's Hadley 1, se sw ne 30-11s-17w, br. Lario O&G Co.'s Marshall 1, nw se ne 36-11s-18w, rig. Frank Hamilton et al's Sack 1, nw nw se 26-13s-19w, cellar. Twin Drlg. et al's Schmidt 1, sw sw ne 22-15s-17w, dr 450 ft.

ELLSWORTH COUNTY—York State Oil Co.'s Koestle 1, nw nw se 12-17s-9w, dr 1793 ft. Roy Ramsey et al's Gregory 1, sw sw se 25-16s-9w, dr 2680 ft. Carter Oil et al's Kruse 1, se sw ne 31-17s-8w, lcn.

GRAHAM COUNTY—Vickers & Phillips' Hutton 1, ne ne se 29-8s-22w, sd 3793 ft.

GREENWOOD COUNTY — McGinnis' Lampe 1, nw ne sw 26-24s-8e, dr 1800 ft. Guy Scott et al's Pedroja 1, se ne se 6-26s-10e, dr 1000 ft.

HARPER COUNTY—Marathon Oil Co.'s Zellers 1, csw nw 17-35s-8w, dr 5458 ft.

HARVEY COUNTY—Harburney Oil Co.'s Scrag 1, nw nw se 24-22s-3w, set 6-in csg 2914 ft, co. Shawver's Judd 1, sw se ne 3-24s-2e, sd 2215 ft. Phillips Pet. Co.'s Kaufman 1, ne ne nw 2-22s-2w, td 3358 ft, rust.

HASKELL COUNTY—Helmerich & Payne et al's Jones 1, cse 34-26s-34w, dr 2000 ft.

KINGMAN COUNTY—Lauck et al's Prather 1, cse 18-27s-8w, td 4535 ft, D&A. Oklahoma Oil Corp. et al's Reeves 1, nw nw nw 29-27s-5w, td 4317 ft, D&A. McBride's Wooldridge 1-A, sw ne se 16-27s-7w, ru.

LINCOLN COUNTY — Graham et al's Smiley 1, ne nw nw 26-10s-9w, rr.

LYON COUNTY—Becker Bros.' Rosillion 1, se sw ne 19-21s-11e, dr 900 ft.

McPHERSON COUNTY — Empire's Cunningham 1, se se se 26-18s-1w, td 2840 ft, 3000 gals acid, 504 bbls oil. Johnson et al's Johnson 1, sw sw nw 33-17s-1w, dr 3073 ft.

NESS COUNTY—Newton Dev. Co.'s Tenny 1, nw nw se 19-18s-25w, dr 527 ft. Continental Oil Co.'s Thompson 1, ce½ e½ sw 13-18s-26w, pb 4225 ft.

PAWNEE COUNTY—Kessler & Their et al's Gustafson 1, sw sw sw 27-20s-16w, rur.

RENO COUNTY—Rosespring et al's Swanson 1, ne ne nw 1-23s-5w, coring 3960 ft. Dickey Oil Co.'s Shepherd 1-A, ne ne nw 22-26s-9w, dr 4363 ft. Miller et al's Detter 1, ne se nw 28-22s-7w, dr 1180 ft. Pryor & Lockhart et al's Kerr 1, cnw 23-23s-8w, ru. Foraker et al's Hiett 1, se sw ne 34-24s-4w, sd 3190 ft. Continental & Wentz' Snook 1, ne nw sw 10-22s-8w, brr. Grahary et al's Miller 1, ne ne se 36-25s-10w, td 138 ft, wocs.

RICE COUNTY—Gilmac Oil Co.'s Sargent 1, se se se 31-18s-6w, sd 3250 ft. Simpson, Noble et al's Pulliam 1, cs½ n½ ne 35-19s-8w, coring 3327 ft. Beardmore et al's Fuller 1, sw sw se 23-18s-7w, set 5-in liner 3350 ft. Simpson-Noble & Stanolind's Bowman 1, sw sw nw 22-19s-10w, td 3305 ft. Shell's Maughlin 1, ne nw se 11-20s-8w, prep to dd. Shell Pet.'s Gordon 1, cw½ w½ ne 21-21s-10w, dr 862 ft. Sage et al's Patton 1, sw sw sw 5-21s-7w, dr 170 ft.

ROOKS COUNTY—Murfin et al's Westhusin 1, ne ne se 12-6s-18w, td 3620 ft, D&A. Skaer Oil Corp. & Reese's Dryden 1, ne ne ne 28-10s-17w, dr 3555 ft. Lester & Dean's Burtt 1, se se ne 29-10s-20w, sd 2714 ft. Shoemake's Stebbins 1, ne ne sw 26-7s-17w, ur 8-in csg 2450 ft. Helmerich & Payne's Bedard 1, cne 29-9s-19w, td 3565 ft, testing. L. C. D. Drlg. Co.'s Westhusin 1, cne se 11-9n-17w, dr 850 ft. Hartman & Blair et al's Hall 1, nw nw nw 25-10s-17w, dr 2195 ft. Buckner & Schaff's McConnett 1, ne ne ne 34-6s-18w, pits.

RUSH COUNTY — Boyle & Grossman's Wilson 1, ne ne ne 33-17s-19w, ur 6-in csg 3728 ft. Skeeles et al's Brumbein 1, sw sw ne 7-16s-20w, pits.

RUSSELL COUNTY—Hartman & Blair's Johnston 1, nw nw nw 11-13s-14w, sd 2023 ft. Lario O&G Co. et al's Steinert 1, nw nw sw 21-15s-15w, set 8-in csg 2625 ft. Hartman & Blair's McAllister 1, sw sw se 24-13s-15w, td 3342 ft, D&A. Armer et al's Maier 1, ne nw ne 20-15s-14w, sd 1275 ft. Lee & Reser's Penix 1, sw sw se 13-14s-13w, dr 1400 ft.

SALINE COUNTY—Ryan Consolidated & Archer's Norton 1, ne ne ne 30-14s-2w, ru.

SEDGWICK COUNTY—Wakefield et al's Howard 1, se se ne 25-25s-2e, ru. Lauck's McLean 1, csw se 1-27s-1w, spd.

STAFFORD COUNTY—Lebow et al's Wolf 1, se sw nw 3-21s-12w, dr 2185 ft. I.T.L.O. Co.'s Mellies 1, cn½ n½ ne 6-22s-11w, rig.

SUMNER COUNTY—Matthews & Derrington's Berry 1, nw nw se 14-25s-1e, sd 3690 ft. Wilson et al's Clark 1, csl nw 15-35s-1w, sd 4430 ft. Craft & Wilson's Nevitt 1, ne nw ne 36-32s-2e, sd 3570 ft. The Texas Co.'s Reed 1, ne se se 11-31s-1w, dr 3175 ft.

TREGO COUNTY — Central Commercial's Wagg 1, nw nw se 17-13s-21w, co 4505 ft. Hall et al's Deines 1, se se se 12-13s-24w, dr 2670 ft.

WOODSON COUNTY—Lewis et al's Riggs 1, sw sw sw 10-26s-14e, sd 1115 ft.

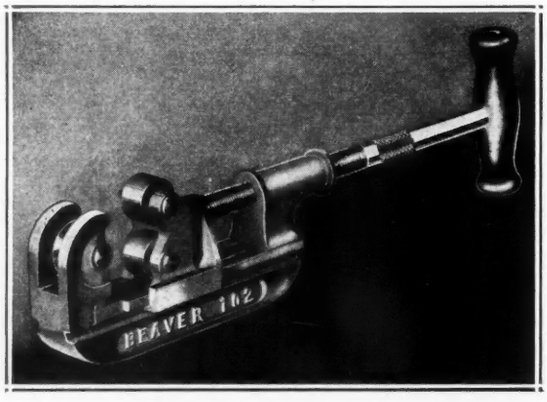
NORTH LOUISIANA

BIENVILLE PARISH — J. W. Leonard et al's Courtney 1, se ne 5-17n-7w, 13⅜-in csg 330 ft dr 1895 ft shale. Rondeau et al's Locke 1, ne nw ne 9-15n-10w, elev 180 ft rur. Walters et al's Davis 1, se sw 3-16n-9w, dk.

BOSSIER PARISH—Producers O&G Co.'s Skannal 1, w½ sw 22-17n-12w, elev 164 ft dr 4425 ft sand. Triangle Drlg. Co.'s Skannal E-1, c s½ 23-17n-12w, 9⅝-in csg 3784 ft dr 4375 ft. United Gas Pub. Serv. Co.'s H. L. Skannal D-1, ne ne 22-17n-12w, elev 186 ft 7-in csg 5310 ft tested sw 5315 ft, swabbing sw td 5315 ft. Bringhurst et al's Bulkley 2, 36-21n-13w, rur.

CADDO PARISH—Fallon Oil Co.'s (formerly Forbing Persian Oil Co.) Cupples 1, 26-16n-13w, rur. Gulf Oil Corp.'s Hatcher 1, 11-17n-15w, mim. J. B. Hutchinson's Colquitt 1, 10-16n-13w, rur. Prairie River Synd's (J. E. Smitherman et al), Hutchinson 1, sw nw 15-15n-12w, 10-in 2518 ft, dr 2815 ft. Pyramid O&G Co.'s Wheeler A-1, w½ ne 16-18n-16w, elev 250 ft, coring 5760 ft.

CLAIBORNE PARISH——Martin & Langford's White 1, se se 26-21n-8w, rur and sd. E. T. Oakes' Patton Est 2, ne ne 1-20n-5w, elev 357 ft, coring 4403 ft red shale (top Travis



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Peak). Sugar Creek Synd.'s Darrett 2, se sw 31-20n-5w, elev 234 ft, coring 7940 ft sand.

DE SOTO PARISH—J. E. Carlson et al's Garland 1, nw sw 7-14n-14w, fsh 625 ft.

FRANKLIN PARISH—S. C. Jensen's Bailey 1, se nw 12-11n-6e, sd 1435 ft.

JACKSON PARISH — Zeigen et al's La. Cent. Lbr. Co. 5, ne nw 13-14n-2w, owdd 1770 ft.

MOREHOUSE PARISH—Henry E. Rondeau et al's Clark 1, ne se 10-20n-7e, elev 90 ft spd.

NATCHITOCHES PARISH—C. D. Morrison et al's Moffett 1, se se 19-10n-10w, woc surf csg 220 ft.

RED RIVER PARISH—Conley et al's Long-Bell 1, ne ne 19-13n-9w, sd 3200 ft. T. G. Shaw's Teekel 1, se sw 34-13n-10w, sd 2830 ft.

RICHLAND PARISH—Gulf Oil Corp.'s R. R. Rhymes et al 15, nw se se 32-17n-6e, spd dr 1310 ft.

SABINE PARISH—A. H. Tarver's Baker 3, nw ne 36-8n-12w, elev 347 ft dr 3500 ft. Whitehurst et al's Whitney Corp. 1, 8-9n-13w, dr 3610 ft.

TENSAS PARISH—H. M. Jones' Chicago Mill & Lbr. Co. 1, ne ne 29-12n-10e, tested est 1 mil ft gas show sw arr deepen 779 ft. Clara Nook Plant. 1, se se 32-12n-10e, dr 640 ft.

WEBSTER PARISH—Feazel et al's Hooper 1, nw sw 8-17n-9w, elev 173 ft sd 3016 ft. Ohio Oil Co.'s R. L. Holloway 6, ne sw 23-21n-10w, elev 210 ft did not set csg, arr deepen td 8369 ft. Red Hawk Oil Co.'s Baker 1, se nw 9-22n-9w, 12-in csg 200 ft. Skidmore et al's Barnette 1, nw sw 29-17n-9w, sd 1050 ft. J. P. Evans' T. H. Johnson 1, sw nw sw 36-18n-9w, dr 1450 ft.

WEST CARROLL PARISH—Lohman et al's C. M. Neely 1, se se sw 19-20n-11e, spd 12-in 185 ft, dr 220 ft.

EAST TEXAS BORDER COUNTIES

HARRISON COUNTY — Hanover, Bergendoll et al's Buchanan 1, Wm. McIlvain sur, fsg 4070 ft.

PANOLA COUNTY—Gulf Oil Corp.'s Pierce & Chesbro 1, J. H. Shahan sur, lcn. Logansport P.L. Co.'s Rushing 1, Manning Smith sur, dr 2620 ft shale.

SHELBY COUNTY—J. R. Hinton et al's C. H. Harton 1, J. Dowling sur, arr deepen 1860 ft. Farley & Sommers' Green 1, Jas. English sur, no report. Rubeling & Potter's O. H. Polley 1, Wm. Whisner sur, top Woodbine 3441 ft sd 3450 ft. Mulroy & Curton's C. Hayden 1, D.F.T. Yordt sur, dk. H. A. Stebbinger et al's Pickering Lbr. Co. 1, C. F. Henry sur, top massive anhydrite 4630 ft coring 4760 ft lime & shale.

SOUTH LOUISIANA

ALLEN PARISH—Humble's Bel 2, Reeves prospect, sec 28-6s-2w, dr shale 7010 ft.

CAMERON PARISH—Magnolia's Hebert 1, Big Lake area, sec 13-12s-9w, taking drill stem test 8690 ft.

IBERIA PARISH — Texas Co.'s State 1, Fausse Point, sec 35-11s-8e, dr shale 3587 ft; same operator's Vermilion Bay 1, 16s-5e, dr shale 509 ft.

JEFFERSON DAVIS PARISH—Shell's Lacassine 1, Hayes prospect, sec 20-11s-5w, woc 8975 ft. Stanolind's Calcasieu National Bank 1, South Jennings prospect, sec 15-10s-3w, dr shale 7196 ft. Strake's Miller Estate 1, Woodlawn prospect, sec 7-9s-8w, dr shale 8096 ft.

ST. BERNARD PARISH—John Cartwright's Nunes 1, e of New Orleans, sec 10-13s-12e, dr shale 3918 ft.

ST. JAMES PARISH — Shell's Colonial Sugar 1, Convent prospect, sec 5-12s-5, dr sandy shale 5109 ft.

ST. MARTIN PARISH—Texas Co.'s Mongouloui 2, sec 14-10s-9e, fsh 7349 ft; same operator's St. Martin Land Co. 8, sec 9-8s-7e, dr shale 8679 ft.

TERREBONNE PARISH—Humble's Continental 1, sec 30-17s-14e, dr sand 6598 ft.

VERMILION PARISH — Continental's Hebert 1, Abbeville prospect, sec 20-12s-3e, dr shale 10,957 ft.

MISSISSIPPI

CLAIBORNE COUNTY — Claiborne O&G Drlg. Co.'s Crawford 1, 6-13n-4e, elev 115 ft sd 985 ft. Claiborne County Dev. Co.'s Ruth Hayden 1, 56-11n-2e, lcn.

GRENADA COUNTY—H. T. Salter et al's Carpenter 1, 5-21n-7e, elev 344 ft dk & mir.

JONES COUNTY — Snow-Black Pet. Co.'s Fox 2, 31-7n-12w, arr deepen 3905 ft.

SIMPSON COUNTY—Goodwill O&G Co.'s Berry 1, 33-2n-4e, lcn.

SMITH COUNTY—Howie & Lewis' Broadfoot 1, 15-4n-7e, sd 1890 ft green limey shale.

WILKINSON COUNTY—T. S. Stoneman et al's L. T. Ventress 1, 38-2n-3w, lcn.

YALOBUSHA COUNTY — W. S. Biles et al's W. C. Bryant 1, ne sw 21-24n-6e, elev 276 ft, dk.

MICHIGAN

ARENAC COUNTY—Tamblyn and Martindale's Buffalo Land 1, 19n-3e-7, rig. T. F. Caldwell, Inc.'s Mutch 1, ne se se, 19n-4e-17, rig.

ALPENA COUNTY—C. W. Teater's Nevins 1, 32n-6e-18, dr 2000 ft.

BAY COUNTY—H. L. McEvoy's Glander 1, 14n-3e-18, dr 1360 ft.

CLINTON COUNTY—J. T. Norris, trustee's Harris 1, 7n-2w-14, lcn. H. E. Bell's Arthur 1, 6n-1w-29, rig. Petroleum Exploration Co.'s Cable 1, 5n-2w-12, fsg 2965 ft.

CHIPPEWA COUNTY — F. D. Barton's Kretan 1, 41n-7e-17, sd 770 ft.

GLADWIN COUNTY—Goll, Graves, Mechling's Oard 1, 18n-1w-25, Dundee 3496 ft, so & g 3572 ft, sd; State 1, 19n-2e-30, sd 1300 ft. Gordon and Mark's Barnes 1, nw nw nw, 20n-1w-22, rig.

GRATIOT COUNTY—Herbert Snell's Smead 1, 11n-4w-20, dr pipe 560 ft. Oil Finders, Inc.'s Stahl 1, 11n-2w-28, dr 2800 ft. Red-Man Oil Co.'s Duckworth 1, 11n-3w-9, rig. R. L. Stoddard's Soule 1, 11n-2w-9, sp. McPherson Co.'s State Bank 1, 9n-1w-11, rig. Associated Petroleum Co.'s Yutzey 1, 10n-4w-26, dr 2400 ft.

IONIA COUNTY—Terry Dale, Inc.'s Tew 1, 6n-7w-12, sd 3540 ft. J. H. Barton's Mosser 1, 6n-5w-19, rig.

INGHAM COUNTY—National Minerals' Smith 1, 4n-1w-9, lcn.

KENT COUNTY—J. S. Barton's Smith 1, 10n-10w-29, sd 3201 ft. Mich. Oil Exploration's Croff 1, 7n-9w-35, sd 3850 ft.

LAKE COUNTY—C. W. Teater's McCabe 1, 20n-12w-26, Dundee 3289 ft, dr 3295 ft.

MACKINAC COUNTY — Charles Van Kuren's Hiawatha 1, ne ne sw, 14n-9w-17, rig.

MASON COUNTY—Dragoon Development's Young 1, 17n-15w-15, dr 2790 ft. Northern Dev.'s Burke 1, 17n-15w-26, sd 2550 ft. Sylvania Oil Co.'s Campbell 1, 17n-15w-10, dr 2400 ft. St. Louis Pipe Co.'s Cartier 1, 19n-15w-6, sp.

MACOMB COUNTY—H. H. Brown's Stepnitz 1, Private Claim 546 2n-13e, lcn.

MECOSTA COUNTY—Hall Be Oyle Co.'s Sears 1, 13n-8w-9, sd 1560 ft. Daily Crude Oil Co.'s Hoffman 1, 16n-7w-9, driving pipe 300 ft. W. J. Bernier's Fitzgerald 1, 13n-9w-9, so 3070 ft, dr 3080 Traverse lime. Frank McCollister's Joass 1, 15n-10w-8, dr 1600 ft.

MONTCALM COUNTY—Robert Gallagher's Bentley 1, 11n-7w-33, sd 3332 ft. W. E. Voss, trustee's Bristol 1, 10n-8w-23, sd 3136 ft. K. B. Montigel's Loree 1, 9n-5w-18, dr 1800 ft.

OTSEGO COUNTY—Harley William's Hanson & Ramae 1, 30n-1w-15, rig.

TUSCOLA COUNTY — V. R. Kirkham's Boyce 1, 14n-7e-24, testing 2843 ft. CoOp Oil Co.'s Forsyth 1, 10n-7e-36, dr 1300 ft.

MONTANA

CARBON COUNTY—Bailey Round Butte Oil Co. 1, nw ne se 3-6s-23e, plugging and abandoning at 1470 ft.

DANIELS COUNTY—Whitetail Oil & Gas Co. 1, nw ne nw 10-36n-50e, dr 2530 ft.

FERGUS COUNTY—Judith Operating Co., Government 2, w nw ne 35-22n-17e, dr 2068 ft. Canmont Exploration Co., Ltd., se ne se 6-21n-18e, ru. H. C. Rowland, Government 3, cel ne sw 18-17n-24e, dr 872 ft.

JUDITH BASIN COUNTY — Fletcher P. Hunt's Hobson 3, nw se ne 30-14n-15e, dr 936 ft.

PONDERA COUNTY—Norden Corporation's Hollan 1, nw nw nw 12-28n-6w, standing at 2200 ft. Gordon Campbell, Hughes 1, nw ne nw 12-30n-4w, std 2000 ft.

TOOLE COUNTY—Boyd Kyle, Wolsti 1, cse se 3-33n-1w, dr 3018 ft.

NEW MEXICO

LEA COUNTY—Argo Royalty Co.'s Lanehart 1, sw se ne 21-25s-37e, mim. Barney Cockburn & Rowan-Nichols Oil Co.'s H. G. Mattern 1, c sw se 7-22s-37e, elev 3426 ft, used 2000 gals acid, td 3727 ft, swabbing water with little oil. C. & G. Oil Co.-The Texas Co.'s Ellen Weir 1, c ne ne 14-20s-37e, elev 3564 ft, top anhydrite 1348 ft, lime pay 4050-4075 ft, s&f 8 bbls oil per hr, packer released and reset at 3420 ft, swabs 6 bbls w per hr, testing. Conoco & California Co.'s Elliott 1-A-21, c se se 21-22s-37e, dk. Culberson, Erwin & Stovall's J. S. Evans 1, c sw nw 18-21s-33e, elev 3893 ft, dr 1750 ft. Emperor Oil Co.'s State 1, c sw sw 5-21s-35e, machine. Gulf Oil Corp.'s L. M. Buffington 1, c nw sw 13-25s-37e, elev 3091 ft, rur, td 3063 ft, showing for big gasser; S. J. Carr 1, c nw sw 3-24s-37e, elev 3267 ft, dr 3500 ft; F. C. King 1, c sw nw 5-23s-37e, elev 3371 ft, dr 3460 ft; J. A. Stuart 1, c sw ne 10-25s-37e, elev 3120 ft, tested 126 bbls oil and 2,800,000 ft gas, td 3431 ft, sd for storage. Humble O&R Co.'s B. E. Boyd 1, c nw se 35-22s-37e, elev 3292 ft, dr 1260 ft; W. B. Farrell 1, c sw se 22-22s-37e, elev 3341 ft, tested sul w at 3691-3705 ft, pb 3684 ft for shot. Jal Nat'l Gas Co.'s C. T. Bates-Humble 1, c nw sw 20-25s-37e, elev 3049 ft, dr 1160 ft. Landreth Prod. Corp.'s E. H. Grizzell 1, c se sw 5-22s-37e, elev 3437 ft, td 3725 ft, flows oil by heads, testing. Harry W. Leonard et al's B. T. Lanehart 2, c se nw 21-25s-37e, elev 3067 ft, dr 2300 ft. Magnolia's E. A. Carson 1, c nw sw 28-21s-37e, elev 3463 ft, top salt 1348 ft, top lime 2700 ft, lime pay 3700-05 ft, dr 3747 ft, with 3000 ft oih; Will Cary 1, c ne se 21-22s-37e, elev 3361 ft, top anhydrite 1108 ft, td 3550 ft, shot 180 qts 3490-3548 ft, completed, flows 60 bbls daily; Scharbauer-Eidson 1, c nw ne 29-16s-35e, dr 210 ft. Ohio O1 Co.'s Anna Walden 1, c ne ne 21-22s-37e, mim. Oil Well Drlg. Co. et al's P. C. Kingsmith 1, c se se 20-19s-37e, mim. Oil Well Drlg. Co.-The Texas Co., L. L. Clardy 1, c se se 13-16s-36e, mim. N. G. Penrose & Rowan-Nichols Oil Co.'s Will Cary-Humble 3, c se nw 22-22s-37e, elev 3364 ft, sd 1150 ft; Cary 4, c sw nw 22-22s-37e, dr 2860 ft. Plains Production Co.'s J. A. E. Knight 1, c ne se 21-24s-37e, machine; Knight 2, c ne sw 14-24s-37e, mim; Williams 1, c sw ne 34-24s-37e, dr 115 ft. Repollo Oil Co.'s Frances Stuart 1, se nw se 10-25s-37e, elev 3114 ft, dr 3100 ft; J. M. Brownlee 1, ne ne sw 25-21s-36e, sp. Republic Prod. Co.'s R. S. Crosby 2, nw nw sw 28-25s-37e, lcn. Samedan O1 Corp.'s Marshall 1, c sw nw 12-21s-36e, elev 3540 ft, td 3861 ft, used acid then shot 60 quts nitro 3791-3850 ft, est 10 bbls oil per hr, testing; S. B. Hughes 1, c ne sw 4-23s-37e, mim. Skelly Oil Co.'s J. V. Baker 2, c nw nw 27-22s-37e, elev 3341 ft, dr 3500 ft; Ellen Sims 1, c nw se 3-22s-37e, elev 3300 ft, td 3375 ft, rust; F. S. Stuart 1, c ne nw 15-25s-37e, elev 3107 ft, td 3150 ft, rust. Sun Oil Co.'s B. T. Lanehart 1, c se se 20-25s-37e, elev 3042 ft, top anhydrite 971 ft, top salt 1145 ft, td 2790 ft, lost tub and dp, pb to 2392 ft to drill by. The Texas Co.'s L. L. Clardy 1, c se se 13-16s-36e, rig; E. D. Fanning 1, c se ne 4-24s-37e, elev 3293 ft, dr 3380 ft. Tide Water Oil Co.'s Anna Walden 1, c se ne 21-22s-37e, elev 3352 ft, shot 260 qts nitro 3490-3598 ft, td 3620 ft, completed, flows 135 bbls daily.

OKLAHOMA

ATOKA COUNTY—Prairie Investment Co.'s Cobb 1, sw ne nw 19-3s-11e, sd 472 ft. Phelps & Coats et al's Fidelity 1, se sw nw 23-1s-12e, sd 750 ft.

BECKHAM COUNTY—Jo-Gail Drlg. Co.'s Gilliland 1, cne ne 3-8s-26w, dr 445 ft.

CARTER COUNTY—Carter Oil Co. et al's

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Leon Voorhees 1, cse sw 34-5s-2w, dr 7117 ft.

COAL COUNTY—Shell Pet. Corp.'s Hill 3, se se nw 30-3n-10e, td 4270 ft, 75,000 ft gas. Sinclair Prairie's Culver 1, ne ne sw 16-1n-8e, fsg 2316 ft. Mitchell's Quiett 1, ne nw sw 35-1n-8e, sd 1900 ft, moving out tools. Carter & Magnolia's James 1, sw nw sw 35-1s-8e, dr 2512 ft. Continental's King 1, ne sw ne 26-1n-8e, dr 1175 ft.

COMANCHE COUNTY — William Davis' Aetna Life 1, se ne ne ne 22-2n-15w, rig.

GARFIELD COUNTY—Stanolind-Amerada's Brunken 1, sw sw ne 32-23n-4w, dr 6226 ft.

GARVIN COUNTY—McElreath & Suggett's Lasater 1, se se sw 2-2n-1w, dr 4567 ft. Luttrell et al's Howell 1, nw se nw 34-1n-1e, dr 130 ft.

GRADY COUNTY—Art Holt et al's Ramsey 1, ne se ne 31-5n-8w, rig. Graham et al's Castleberry 1, sw se nw 8-5n-7w, sd 580 ft.

HUGHES COUNTY — Phillips Pet. Co.'s Eberle 1, ne ne sw 12-5n-9e, dr 5640 ft. Sivils et al's Montgomery 1, nw sw nw 7-9n-9e, fsg 3498 ft. Blackwell O&G Co.'s Long 1, se ne nw 29-9n-9e, dr 2128 ft. Sinclair Prairie et al's Wilkey 1, sw sw sw 23-9n-8e, sd 3-31 ft. Blackwell O&G et al's Homahte 1, sw ne ne 1-9n-10e, dr 100 ft.

JACKSON COUNTY—Burnham's Oliver 1, nw nw se 26-1n-20w, fsg 2085 ft. Ben Russell's Danial 1, nw ne se 13-3n-20w, dr 1260 ft. Jackman's Fee 1, sw sw sw 27-1s-24w, dr by 2100 ft. Delaney's Mock 1, cne sw 32-1n-20w, dr 1600 ft.

JEFFERSON COUNTY — Red River Oil Co.'s Trout 1, se ne ne 6-8s-7w, td 2212 ft, dr cement.

JOHNSTON COUNTY—Shell Pet. Corp.'s Illinois Bankers Life 1, nw se ne 10-2s-7e, td 815 ft, woc. Patton et al's McCrummens 1, sw sw ne 16-1s-6e, spd.

KAY COUNTY—Allen & Texas Co.'s Fulton 1, se se se 18-27n-4e, sd 1675 ft. Denver P&R Co.'s School 1, se nw ne 13-26n-1w, br.

KIOWA COUNTY—Beeler & Klein's Parrish 1, se se nw 3-6n-15w, sd 290 ft.

LE FLORE COUNTY—McGraw et al's Tidwell 1, cnw se 17-3n-22e, rerunning 10-in csg.

LINCOLN COUNTY—Amerada et al's Zimmerman 1, sw sw ne 10-12n-5e, td 4358 ft, testing. Mid-Continent's Hillman 1, sw se ne 29-13n-6e, dr 4380 ft. Skelly's Sporn 1, nw ne sw 21-17n-3e, dr 2532 ft. Kemp & Continental's Lobaus 1, nw sw nw 21-17n-5e, rig.

LOVE COUNTY — Amerada-Stanolind's Westheimer & Daube 1, sw se sw 27-6s-2e, td 7363 ft, pb 2970 ft, testing. Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, sd 8565 ft. Riddle et al's Johnson 1, csw se 20-8s-2w, rig.

MARSHALL COUNTY — Helmerich & Payne's Taliaferro 1, nw se sw 26-5s-5e, sd 2182 ft. Sherril & Rounds' Taylor 1, sw ne ne 30-7s-7e, dr 420 ft.

McINTOSH COUNTY—Dieckman's McIntosh 1, se se se 4-12n-17e, dr 965 ft. Wigton et al's Koch 2, nw se ne 15-11n-15e, dr 3275 ft.

NOBLE COUNTY — Stanolind-Amerada's Gillham 1, ne se se 14-22n-1e, dr 3330 ft.

OKFUSKEE COUNTY — Oklahoma Oil Corp.'s King 1, se se ne 23-10n-8e, mir.

OKLAHOMA COUNTY — O'Shaughnessey, Inc.'s Berlowitz 1, se sw ne 9-12n-3w, dr 5906 ft.

OSAGE COUNTY—Gray & Tolson's 1, sw sw ne 33-25n-7e, dr 2902 ft. Stoner & Miller's 1, nw ne sw 18-22n-8e, dr 1170 ft.

PAYNE COUNTY — Amerada-Stanolind's Pratt 1, se se se 29-19n-5e, td 3784 ft, flow and swab 150 bbls oil.

PITTSBURG COUNTY — Oklahoma Dist. Oil Co.'s Beeler 1, ne ne sw 7-7n-14e, td 292 ft, wocs.

SEMINOLE COUNTY — Tom Phillips & Kimraw Drlg. Co.'s Chempernay 1, se se nw 7-6n-7e, dr 4000 ft. Twin State's Hamm 1, sw se sw 24-10n-7e, dr 3980 ft. Crosbie's Casey 1, cn½ n½ ne 30-6n-8e, dr 3325 ft. Arkansas Royalty Co.'s Kiker 1, se se ne 9-10n-7e, dr 3240 ft. Deaner & Tilley et al's Wilson 1, se sw sw 29-7n-6e, dr 2845 ft. Rudco O&G Co.'s Butner 1-A, ne ne sw 15-9n-8e, dr 1350 ft. Kennedy's Bowlegs 1, nw nw se 3-8n-7e, lcn.

STEPHENS COUNTY—Endicott et al's McFatridge 1, nw nw sw 11-3s-9w, sd 1452 ft. Ed Parson's Olson 1, csw sw 21-2n-8w, rig.

TEXAS COUNTY — Allison & Barnhill's Bingley 1, sw sw ne 30-2n-18e, cm, rig.

TILLMAN COUNTY — Gulf Oil Corp.'s Wearmouth 1, se nw se 31-1s-16w, fsg 5125 ft. Johnson, Young & Mitchell's Donahoe 1, se nw nw 7-4s-17w, sd 2640 ft. Gulf Oil Corp. et al's McWilliams 1, nw sw sw 15-3s-17w, dr 4665 ft. Bernheim's Tate 1, ne ne nw 16-1s-19w, dr 2448 ft. Smith's Hammill 1-A, ne nw nw 6-5s-15w, sd 2140 ft. Eugene Skinner's Rilling 1, se se nw 22-1s-15w, dr 220 ft.

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WEST TEXAS

ANDREWS COUNTY — Fuhrman Pet. Corp.'s W. T. Ford 4 (440-ac), sec sec 16, blk A-43, PSL sur, mim. Grisham-Hunter Corp.'s Ratliff-Bedford 1, c nw¼ sec 24, blk 73, PSL sur, dr 475 ft. Humble's J. S. Means 8, c se ne sec 19, blk A-35, PSL sur, elev 3141 ft, top anhydrite 1870 ft, top salt 1905 ft, flowed by heads 4520 ft, sd for acid; J. S. Means 9, near c se ne sec 22, blk A-35, PSL sur, rig.

BORDEN COUNTY—John I. Moore et al's Clayton-Johnston-Conoco 1, se¼ sec 20, blk 32, T&P Ry. sur, T-4-N, lcn.

BREWSTER COUNTY—Floyd C. Dodson et al's Texas American Synd. 1-A, c ne ne sec 66, blk 10, GH&SA Ry. sur, deep test, elev 4228 ft, trace gas 2100 ft, top Deleware 2297 ft, fsh cas 2316 ft.

COCHRAN COUNTY—Honolulu Oil Corp-Cascade Pet. Co.'s Duggan Bros. 1, c labor 13, league 55, Oldham County School Land sur, dr 2080 ft.

CONCHO COUNTY—John W. Westbrook et al's C. C. Ledbetter 1, sec 2, blk 65, H&TC Ry. sur, A-1673, elev 2000 ft, top Ellenberger lime 2611 ft, hfw, dr 2930 ft.

CRANE COUNTY — American Liberty Oil Co. et al's J. B. Tubb-Humble 2, c ne sw sec 11, blk B-27, PSL sur, lcn. Big Basin Pet. Co.'s Jax Cowden 1, nec nw ne sec 77, blk X, elev 2456 ft, top salt 548 ft, co 2610 ft. Clark-Cooper & Smith's A. P. Jordan 1, NEc 160-ac lse, sec 12, blk B-22, PSL sur, machine. Steve Currie et al's TP Land Trust 1, swc se¼ sec 33, blk 44, T&P Ry. sur, T-3-S, dr 2850 ft. A. R. Eppenauer and A. H. Livingston's Livingston 1, sec 13, blk 6, H&TC Ry sur, lcn. Gulf Oil Corp.'s M. B. McKnight 2, c ne¼ sec 9, blk B-21, PSL sur, top anhydrite 416 ft, top salt 585 ft, dr salt 1100 ft; W. N. Waddell et al 2, c ne sw sec 18, blk B-21, PSL sur, elev 2620 ft, top sand 1620 ft, dr 4270 ft. Gulf and T. B. Cranfill's J. B. Tubb 2, nec sec 12, blk B-27, PSL sur, top anhydrite 455 ft, top salt 500 ft, hfw, dr 3995 ft. Humble's J. B. Tubb 3, swc sec 10, blk B-27, PSL sur, bad hole, pb fr 1709 ft 900 ft. Loffland Bros. et al's J. B. Tubb-Gulf 2, sec n½ sec 9, blk B-27, PSL sur, top anhydrite 325 ft, top salt 465 ft, dr 2115 ft. J. E. Lucas et al's R. S. Pershing-The Texas Co. 1, sec 1, blk 31, H&TC Ry sur, machine. John I. Moore et al's T. C. Barnsley 1, c sw¼ sec 43, blk 32, PSL sur, elev 2472 ft, top anhydrite 500 ft, top salt 680 ft, top brown lime 2505 ft, top sul w in big lime 4555 ft, dr 5140 ft. L. R Stroud et al's I. Mosley 1, sec 4, blk 31, H&TC Ry sur, elev 2373 ft, top anhydrite 525 ft, top salt 820 ft, sd 1902 ft. Tide Water's W. P. Edwards 1, swc nw¼ sec 2, blk B-23, PSL sur, elev 2775 ft, pay 3578-80 ft, td 3590 ft, flowed 400 bbls nat'l, used 5000 gals acid, testing.

CROCKETT COUNTY—John I. Moore et al's A. C. Hoover 1, sec sec 4, blk "FF", B&B sur, sd 1255 ft.

JEFF DAVIS COUNTY—C. M. "Dad" Joiner et al's Jones-Coffield 1, ne¼ sec 8, blk 3, H&TC Ry sur, dr lava 4615 ft.

DAWSON COUNTY — Harry Adams, Fred Turner and Ray Albaugh's John Robinson 1, c nw¼ sec 46, blk M, EL&RR sur, elev 3085 ft, top salt 1970 ft, top lime 4580 ft, sd 4929 ft.

ECTOR COUNTY — Broderick & Calvert, Inc.'s H. C. Foster 1, nec n½ se¼ sec 13, blk 43, T&P Ry sur, T-2-S, sd for repairs, td 3033 ft. W. H. Dunning Jr. et al's H. E. Cummins 1-B, sec ne¼ sec 33, blk 45, T&P Ry sur, T-1-N, dr 980 ft. Empire O&R Co.'s H. E. Cummins 1, nwc 160-ac lse sec 34, blk 45, T&P Ry sur, T-1-N, dk. Grisham-Hunter Corp.'s R. B. Cowden 1, c nw sw sec 10, blk 45, T&P Ry. sur, T-2-N, elev 3302 ft, top anhydrite 1465 ft, top salt 1491 ft, dr 2880 ft; R. B. Cowden 2, c se¼ sec 8, blk 45, T-2-N, elev 3308 ft, top anhydrite 1470 ft, top salt 1520 ft, dr 2230 ft. Phillips Pet. Co.-Pure Oil Co.'s Clyde Cowden 5, nw¼ sec 23, blk 44, T-1-S, T&P Ry, sur, lime pay 4099-4158 ft, flowed 497 bbls oil 3 hrs, est 3,750,000 ft gas. Sinclair Prairie Oil Co.'s J. L. Johnson 1-A, nec nw¼ sec 42, blk 42, T&P Ry sur, T-1-S, lcn. York-O. C. Harper et al's TP Land Trust 1, ne¼ sec 10, blk 44, T&P Ry sur, T-3-S, lcn; J. E. Witcher 1, c nw nw sec 19, blk 42, T&P Ry sur, T-2-S, rig.

EL PASO COUNTY — Tri-State Oil Co.'s Chas. and L. M. Kinkel 1, nec sec 237, S. F. No. 7232, ur 2377 ft.

FISHER COUNTY—Forest Development Co.'s A. M. Dry 1, near c sw sec 108, blk 2, H&TC Ry sur, elev 2087 ft, run 7-in cas, td 3770 ft. John McKeon, Inc and Ellis & Eubanks' C. C. Wourland 1, nwc sw nw sec 15, blk 21, T&P Ry sur, elev 2126 ft, dr 2210 ft.

GAINES COUNTY — Humble O&R Co.'s Wales Eubank 1, c sw sw sec 6, blk AX, PSL sur, elev 3365 ft, top anhydrite 1790 ft, top salt 1842 ft, top Yates sand 2880 ft, top brown lime 3950 ft, dr 4090 ft. Landreth Prod. Corp.'s W. H. Kirk 1, swc sw¼ sec 22, blk A-21, PSL sur, elev 3271 ft, top anhydrite 1950 ft, salt series 2047-2725 ft, top brown lime 4021 ft, top white lime 4315 ft, tested dry in saturated lime section at 4703-4788 ft, dd to 4820 ft, used 1000 and 3000 gals acid, completed swabbing 107 bbls 28 gravity oil daily.

GARZA COUNTY — Grisham-Hunter Corp-Brown Eagle Oil Co.'s J. R. Sullivan 1, nw½ sec 3, S. E. Harper sur, A-1118, sd 2400 ft. M. L. Richards et al's U. U. Post 1, nwc se¼ sec 1232, D. L. Phillips sur, A-938, dr 2090 ft.

GLASSCOCK COUNTY—Floyd C. Dodson et al's J. G. Carter 1, swc sw¼ sec 8, blk 33, T&P Ry sur, T-3-S, sp. Shell Pet. Corp.'s I. S. McDowell 1, s½ sec 41, blk 34, T&P Ry sur, T-2-S, lcn.

TOM GREEN COUNTY—Spinner Oil Co.'s A. and B. W. Reed 1, swc 137-ac lse, subdiv 39, Collyns Ranch, or Mayson & Perry sur, sdo 2505 ft. F. E. Webb et al's D. B. Horne 1, near nec of 1235-ac lse, sec 137, Washington Co. Ry sur, mim.

HOCKLEY COUNTY—The Texas Co.'s Bob Slaughter 1, labour 83, league 38, Zavala C.S.L. sur, mim.

HUDSPETH COUNTY—Costello Oil Corp.'s L. S. Costello 1, swc sw¼ sec 36, blk 70, T&P Ry sur No. 1879, elev 4075 ft, mim. Haymon Krupp Oil & Land Co.'s S. J. Thaxton 1, near sec ne se sec 34, blk 74, T&P Ry sur, Tsp 6, ur 1131 ft.

JONES COUNTY — Consolidated Oil Co.'s Chas. Hamilton 1, (543.8-ac), sec 21, blk 4, H&TC Ry sur, hfw 2165-90 ft, dry and abd 2255 ft. Chas. Gyr and S. L. Davis' L. E. Cyburn 1, nec 80-ac lse, sub-div 27, H. Millard sur, fsh 220 ft. N. H. Martin & Son's M. & E. B. Spurrier 1 (20-ac lse), W. C. Walker sur, 3 mi n Nugent, testing on pump, td 1929 ft. Owens-Snebold Oil Corp-Wittmer O&G Properties' L. F. Jones 1, near sec 269-ac lse. John W. McKissick sur No. 204, sp. Owens-Snebold Oil Corp.'s S. Gorman 1, swc 160-ac lse, sec 5, blk 6, W. C. Walker sur, dr 1495 ft. Dobbs Oil Co. and W. K. Wood et al's W. J. McCreight 1, sec 99-ac lse, sec 14, Orphan Asylum Lands, dr 1410 ft. H. O. Wooten et al's A. G. Poindexter 1 (236-ac), sec 9, ME&P Ry sur, mim.

LOVING COUNTY—Mason Oil Co.'s Minnie Kyle 2, swc ne¼ sec 20, blk 55, T&P Ry sur, Tsp 1, dr 825 ft. Porter Rankin et al's W. D. Johnson 1, nw¼ sec 12, blk 57, T&P Ry sur, Tsp 1, elev 2904 ft, top Deleware lime 3119 ft, top sand 3151 ft, swabbing oil and water td 3214 ft.

NOLAN COUNTY—N. B. Hall, A. Glenn et al's Georgia Tech 1, sw¼ sec 89, blk 24, T&P Ry sur, elev 2330 ft, spd and abd.

PECOS COUNTY—R. O. Clark et al's Mrs. E. C. Powell 1, west cor sec 96, blk 10, H&GN

Ry sur, sd 820 ft. Dobbs Oil Co.'s J. M. Rooney 1, near c ne ne sec 12, blk 125, T&St.L. Ry sur, elev 3005 ft, top anhydrite 973 ft, top salt 1370 ft, oil saturation 2521 ft, dr hard gray lime 2605 ft Lee Pet. Corp.-Bruce McKague's R. P. Hunyard-Humble 1, swc sec 2, blk 144, T&St.L Ry sur, dr 470 ft. Marion Prod. Co.'s W. Courtney 5, nwc sec 78, blk OW, T. M. Ry sur, sd 200 ft. E. R. Minshall et al's J. B. Baker 1, near c sw nw sec 25, blk 146, T&St.L. Ry sur, dr 1280 ft. Stanley A. Thompson et al's Elsinore Cattle Co. 1, se¼ sec 53, blk D, GC&SF Ry sur, Ordovician lime test, elev 3938 ft, sd 1648 ft, crooked hole. Trans-Texas Oil Co.'s F. M. Gallaher 1, nec nw sec 9, blk 51, T&P Ry sur, Tsp 10, sd 480 ft; Popham Land & Cattle Co. 1, se¼ sec 235, blk 11, GH&SA Ry sur, dr 580 ft.

REEVES COUNTY—R. W. Clark, F. S. Miller and Frank Babcock's Radford Grocery Co. 1, near c of e line sec 39, blk 56, PSL sur, elev 3169 ft, sd 811 ft.

RUNNELS COUNTY—Golden Pet. Co.-John Castor's H. Giesecke 1, blk 150, subdiv 3, Jas. Hughes sur, dr 1400 ft.

SCHLEICHER COUNTY—Cardinal Oil Co.-Rowan-Nichols Oil Co.'s J. A. Whitten 1, c ne nw sec 35, blk L, TC Ry sur, elev 2353 ft, co 4886 ft. Mangus Oil Corp.'s Judkins-Spencer (Pure) 1, c sw¼ sec 4, GC&SF Ry sur, blk V-28, or Hooper-Wade sur, blk A, elev 2209 ft, top Ellenberger lime 5902 ft, tested sul w, pb fr 6527 ft to 5912 ft, dry and abd.

SCURRY COUNTY—C. W. Guthrie et al's T. E. Sorrels 1, sec sec 101, blk 97, H&TC Ry sur, sd 1240 ft.

STERLING COUNTY—W. B. Hogan et al's Geo. Richardson 1, sec 110, blk 6, H&TC Ry sur, lcn.

TAYLOR COUNTY—Geo. Callihan et al's S. J. Winter 1, (19.4-ac), sub-div 3, Alex Thompson sur No. 20, hfw 2005-20 ft, dry and abd 2036 ft. Laurel Dunn & Herman McAlister's M. Bowles 1, sec sw¼ sec 29, B.A.L. sur, sp. A. R. Forster et al's O. A. Prescher 1, near nec of 186-ac lse, sec 14, blk 86, J. R. Shipman sur, dr 990 ft. Illinois Pet. Co.'s G. A. Bingham 1, nec 150-ac lse, subdiv 29, Guadalupe C. S. L. sur, League 121, dr 600 ft.

TERRELL COUNTY—F. C. Bates and J. H. Felps' J. H. Felps 1, sec nw¼ sec 5, G. W. Turley sur, blk A-4, elev 2185 ft, sd 5635 ft.

TERRY COUNTY—J. A. Estes et al's F. Brownfield Graham 1, sec nw sw sec 23, blk T, D&W Ry sur, lcn. Uscan Oil Co.'s A. R. Brownfield 1, c n½ sec 54, blk K, PSL, lcn for 5500-ft test.

UPTON COUNTY—O. S. Brewer & F. Smith, Inc.'s Cordova Union 1-A, dr 250 ft. Geo. B. McCamey et al's Cordova Union 1, near swc ne¼ sec 19, blk 1, MK&T Ry sur, dr 1980 ft.

WINKLER COUNTY—Atlantic O.P. Co.-Wahlenmaier Pet. Corp.'s Fred Leck 1-B, nwc nw¼ sec 3, blk 26, PSL sur, td 3075 ft, testing. Amon G. Carter et al's J. B. Walton-Pure 2, swc ne¼ sec 1, blk B-3, PSL sur, lcn; Walton-Pure 3, nwc sw¼ sec 9, blk B-3, PSL sur, elev 2938 ft, td 3400 ft, pb and shot 200 qts 3275-3350 ft, completed, flowed 347 bbls daily. Wm. H. Dunning Jr et al's B. F. Jenkins 1, swc s½ s½ sec 21, blk 77, PSL, dk. R. H. Henderson-Uscan Oil Co.'s R. A. Leck-Gulf 1, nec sec 32, blk 74, PSL sur, jkd and abd 3187 ft. Humble's J. B. Walton 3-C, swc se¼ sec 34, blk 74, PSL sur, dr 2800 ft. Fred Hyer et al's Cowden Cattle Co. 1, c nw¼ sec 8, blk A-56, PSL sur, elev 3082 ft, top anhydrite 1230 ft, top salt 1500 ft, sul w in big lime 4867-4891 ft, dry and abd. Illinois Oil Co.'s W. A. McCutcheon-Conoco 1-A, nwc sw¼ sec 16, blk B-3, PSL sur, td 2973 ft, shot 200 qts nitro 2850-2950 ft, completed, flowed 970 bbls pot'l and allowed 80 bbls daily; McCutcheon-Conoco 1-B, nwc se¼ sec 25, blk B-3, PSL sur, td 2477 ft, dr by junk at 2208 ft. C. M. "Dad" Joiner et al's Cowden-Evans 1, near c nw¼ sec 46, blk 73, PSL sur, elev 3203 ft, top anhydrite 1580 ft, top salt 1640 ft, top Yates sand 2930 ft, top lime 4060 ft, dr 4840 ft. K. D. Oil Co.'s Pink Mitchell 1, nwc s½ ne¼ sec 23, blk B-10, PSL sur, elev 2814 ft, top anhydrite 1010 ft, top salt 1070 ft, sd 1150 ft. Paul Osborn, Bert Fields et al's L. Daugherty-Wentz 1, swc w½ sec 3, blk C-23, PSL sur, mim. Reed and Duffy's John Sealy 1, c ne nw sec 8, blk A, GMMB&A sur, machine. Shell Pet. Corp.'s R. A. Leck 1, nec se¼ sec 32, blk 74, PSL sur, elev 2859 ft, tested sul w in lime 3385-3450 ft, dry and abd. Wahlenmaier Pet. Corp.'s J. B. Walton-Leck 1-D, swc n½ sw¼ sec 3, blk 26, PSL sur, rig. Wahlenmaier & Atlantic & I. B. Walton-Leck 2-C (A), swc s½ sw¼ sec 3, blk 26, PSL sur, rig.

YOAKUM COUNTY—E. R. Bahan and R. R. Rhodes' Mrs. Alice Henard 1, c sw¼ sec 367, blk D, John H. Gibson sur, elev 3691 ft, top anhydrite 2279 ft, trace gas 1672-1700 ft, salt series 2410-2965 ft, top Yates sand 3090 ft, base Red Beds 4470 ft, top brown lime 4490 ft, dr 4600 ft. Elliott Roosevelt and Lou G. Stogner's Roosevelt-Goggins 1, sec ne¼ sec 215, blk D, John Gibson sur, elev 3712 ft, top anhydrite 2390 ft, top salt 2520 ft, dr 2990 ft.

EAST TEXAS

ANDERSON COUNTY—Gulf Oil Corp.'s M. J. Ross 1 (54.7-ac), Robt. Erwin sur, Camp Hill area, elev 487 ft, top Georgetown lime 5452 ft, moving in heavier draw works, td 6675 ft in hard lime. Tide Water-Seaboard Oil Corp.'s J. N. Edens 15 (988.6-ac), Samuel Snider sur, Cayuga area, elev 313 ft, Pecan chalk 2245-2410 ft, Austin chalk 3161-3498 ft, top Woodbine series 3880 ft, top Georgetown lime 4619 ft, dr broken lime 5386 ft.

BOWIE COUNTY—Fay T. Chew and Brossett's Byron Barkinson 1 (90-ac), J. W. Parkman sur, 2½ mi n of Leary, sp and sd. Ferguson and Hill's A. Y. Breckenridge 1, Nancy Dycas sur, 4 mi w Texarkana, sp and sd.

COLLIN COUNTY—Port Bolivar Co.'s O. G. Durning-Clarkston 1-A (140-ac), Wm. Creager sur, Pat. 1193, elev 722 ft, sd 4096 ft; A. Shirley 1 (50-ac) Gwynn Morrison sur, 1 mi e of Anna, dk.

DELTA COUNTY—Delta Oil Co., Inc.'s J. H. McKinney 1 (231-ac), L. Hampton sur, lcn.

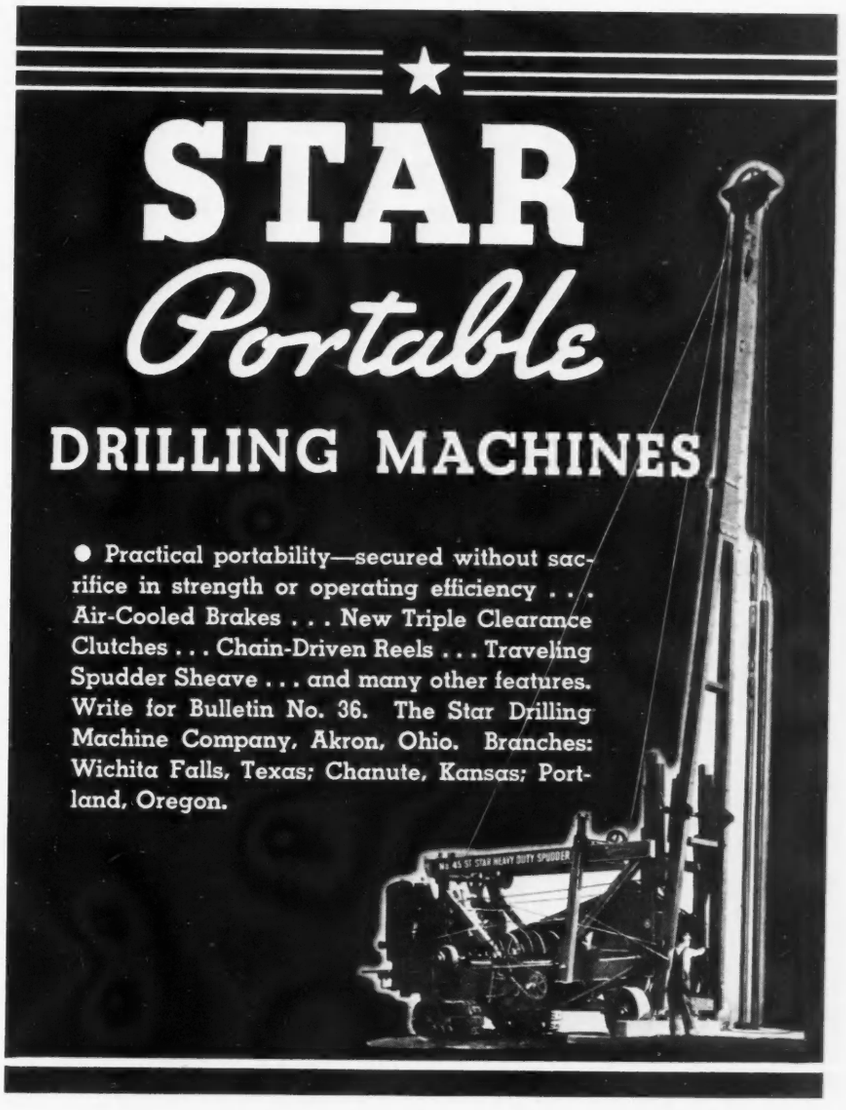
FALLS COUNTY—J. Edward Mills et al's Sam Grucholski 1 (40-ac), Dennis Herold League, 5 mi sw Kosse, elev 521 ft, top Pecan chalk 2114 ft, Austin chalk 2765-2946 ft, dr Eagle Ford shale 3275 ft.

FRANKLIN COUNTY—J. B. Bond & J. Z. Werby's T. J. Sanders 2 (42.3-ac), W. F. Dyer sur, elev 359 ft, Pecan chalk 1262-1300 ft, top Woodbine 2888 ft, top Red Beds 3005 ft, top Georgetown lime 3424 ft, Paluxy series 4198-4344 ft, tested sw, dry and abd. Earl Bateman Drlg. Co.-Al Ravenger's E. L. Phillips 1 (38½-ac), Wm. Bridwell sur, elev 358 ft, top Georgetown lime 3510 ft, top Paluxy 4287 ft, tested sw at 4357-4361 ft, pb to 4343 ft, hfo and sd for pump. Joe DeGrazier et al's F. M. Batts 1 (30-ac), F. M. Batts sur, elev 356 ft, top Georgetown lime 3504 ft, dr lime 3905 ft. Virginia Hudson et al's B. M. Patterson 1 (31-ac), E. Rice sur, 3½ mi sw Hagansport, rig. Humble's A. P. King-Hughes 2 (1053.36-ac), O. James sur, top Georgetown lime 3406 ft, pay series 4143-4238 ft, completed flowed 42 bbls per hr 2-in choke; King-Hughes 3, elev 369 ft, rig; King-Hughes 4, elev 368 ft, rig; P. J. Dawson 1 (80.45-ac), B. H. Epperson sur, elev 372 ft, dr 3220 ft. Lucey Pet. Co. et al's W. N. Crawford 1 (25.23-ac), O. James sur, elev 368 ft, top Georgetown lime 3486 ft, pay series 4157-4300 ft, completed flowing 27 bbls per hr via tubing. Magnolia-Humble's C. L. Owings 1 (160-ac), McKinney-Williams sur, elev 367 ft, top Pecan chalk 1530 ft, dr 2370 ft. McAlester Fuel Co.'s A. M. Crawford 2 (25.23-ac), O. James sur, elev 366 ft, Pecan chalk 1600-1760 ft, top Georgetown lime 3390 ft, pay zone 4159-4304 ft, coring; Crawford 6, elev 366 ft, dr 3600 ft. Red Iron Drlg. Co.-Dean Bros. & Adkisson's Lavada Baptist Church 1, (1-ac), C. Payne sur, elev 372 ft, cem sur cas. Stroube & Stroube's B. Norman 1, MEP&P Ry. sur No. 344, lcn. Stroube and L. S. Flannery, Inc.'s J. L. Hedrick 1 (66.08-ac), MEP &P Ry. sur A-344, Pecan chalk 1255-1317 ft, top Georgetown lime 3455 ft, reaming 4353 ft.

GRAYSON COUNTY—Olson Drlg. Co.-James H. Gardner et al's SW Life 1 (160-ac), J. C. Jamison sur, A-865, 3 mi n Pottsboro, elev 767 ft, top Sylvan shale 4870 ft, Viola lime 4901-5096 ft, td 5890 ft, pb to 5320 ft, trying to drill by junk. Port Bolivar Co.'s Creed Taylor 1 (160-ac), J. Fitzhugh sur, 3 mi se Gunter, sd 4048 ft.

HOPKINS COUNTY—D. S. Hager, W. P. Luse & Leon Russ' J. E. Worsham 1 (150-ac), A. O. Wetmore sur, 2½ mi s Sulphur Bluff, elev 440 ft, Pecan chalk 1187-1208 ft, top Woodbine 3040 ft, top Georgetown lime 3600 ft, Paluxy series 4467-4500 ft, stand hfo, testing 27.9° gravity at 98° temperature, will pump. R. T. Sullins et al's H. W. Wilson 1 (8½-ac), A. O. Wetmore sur, lcn.

HOUSTON COUNTY—Branch et al's P. S. Griffiths 1, Frank Johnson sur, 3 mi sw Crock-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ett, dk. Ellison, McBride, Haberle & Thornton's J. E. Bean 1 (40-ac), Eli Steadman sur, 1½ mi nw Grapeland, elev 482 ft, Pecan chalk 4660-4894 ft, Austin chalk 5610-5961 ft, top Woodbine series 6024 ft, est 75,000,000 ft gas daily with 10 bbls water wh te distillate per hour from Woodbine 6025-6037 ft, may dd. Walter L. Goldston et al's B. W. Burns-Humble 1 (50-ac), Juan de la Reviere sur, dr 1910 ft.

HUNT COUNTY—Penn Oil Corp.-Elmer S. & Fox Wood's A. B. Manning 1 (57½-ac), Sally Owens sur, mim for 6500-foot test. Texola Land Corp.'s Gen'l American Life Ins. Co. 1 (203.8-ac), blk 104, J. Yeary sur, lcn.

KAUFMAN COUNTY—Colton, R. P. Lester et al's Barrow Bros. 1 (40-ac), J. D. Taylor sur, 8 mi ne Elmo, elev 528 ft, Austin chalk 2235-2681 ft. dr Woodbine Red Beds 4351 ft.

LAMAR COUNTY—J. S. Abercrombie Co.-Harrison Oil Co.'s C. M. Terrell 1 (220-ac), Abner Hill sur, 4½ mi se Paris, mim. J. A. Forester et al's J. S. Woodward 1 (1834-ac), J. W. Woodward sur, 1½ mi e by s of Minter, elev 402 ft, top Georgetown lime 2256 ft, Paluxy sand 3060-3144 ft, top anhydrite 3735 ft, base hard anhydrite 4075 ft, broken to 4105 ft, sd 4516 ft, will dd.

LIMESTONE COUNTY—C. F. Lytle et al's J. L. Thompson 1-T (141-ac), w side Mexia field, elev 459 ft, cem 7-in cas 6002 ft, td 6065 ft, tested salt water flow with gas, pb to 6059 ft, sdo.

NAVARRO COUNTY—W. A. Reiter et al's J. V. Bounds 1 (180-ac), H. Shelton sur, lcn.

RED RIVER COUNTY—J. S. Abercrombie Co.-Harrison Oil Co.'s Southern Pine Lumber Co. 1-A (392.57-ac), D. D. Bruton sur, 12 mi ne Clarksville, elev 407 ft, Georgetown lime 665-1020 ft, top Paluxy 1057 ft, anhydrite 1740-1800 ft, top sand with good oil saturation 2104 ft, tested sw at 2110 and 2118 ft, fsh in basal Trinity, td 2292 ft. R. H. Manning and Texfornia Co.'s Hocker-Hughes 1 (80-ac), MEP&P Ry. sur No. 642, 6 mi sw Lydia, elev 307 ft, Nacatoch sand 424-460 ft, sd 850 ft.

ROBERTSON COUNTY—J. Edward Mills et al's Tony Congelosi 1 (75-ac), Geo. A. Nixon sur, 3½ mi sw Hearne, mim for 4000-ft test.

RUSK COUNTY—Pure Oil Co.'s W. H. Faulkner 1 (60-ac), Wm. Elliott sur, 5 mi e Mount Enterprise, elev 563 ft, Pecan chalk 2650-2890 ft, Austin chalk 3286-3450 ft, top Georgetown lime 3446 ft, stringer anhydrite 5320-25 ft, top massive anhydrite 5945 ft, tested sw at 6177-6298 ft, top Travis Peak red beds 7323 ft, trace gas and mud on dst at 7471-7488 ft, dr hard sandy-shale 7521 ft.

TITUS COUNTY—E. E. Combs et al's Dr. R. A. Tate 1, c lot 2, blk 30, Talco, elev 373 ft, rig. Eugene Constant'n et al's (Delta Drlg. Co.) Cato 1, c blk 44, Talco, Pecan chalk 1610-1750 ft, top Georgetown lime 3372 ft, dr 3900 ft. L. L. Deaton et al's W. H. Gray 1, c lot 7, blk 17, Talco, dr 1000 ft. Humble's N. B. Davis 1 (102.1-ac), I. P. Stern sur, dk; Mrs. L. Stevenson 1 (88.1-ac), I. P. Stern sur, dr 3800 ft. Horne Oil Co. et al's Barton Bros. 1 (3-ac), M. V. Delgado sur, elev 361 ft, Pecan chalk 1550-1755 ft, top Georgetown lime 3386 ft, pay series 4152-4338 ft, completed, flowed 33 bbls per hr via tubing, tests 24.7 gravity at 103° temperature. Jones-Shelburne, Inc. et al's L. Stevenson 7 (71.9-ac), O. James sur, dk; Hazelwood 1 (10-ac), I. P. Stern sur, elev 342 ft, top Red Beds 3238 ft, top Georgetown lime 3511 ft, Paluxy series 4285-4351 ft, tested water, pb to 4334 ft, swabbed dry then showed little oil with water. W. P. Luse et al's W. T. Sullivan I-A (4-ac), M. V. Delgado sur, elev 371 ft, Pecan chalk 1678-1728 ft, top Georgetown lime 3440 ft, Paluxy pay 4154-4349 ft, flowed 35 bbls per hr via tubing, complete. W. P. Luse and Fosdick's Nugent 2 (2.3-ac), blk 18, Talco, dr 3000 ft. Magnolia-Humble's L. Blackburn 1 (80.51-ac), Ben Jones sur, cem 7-in pipe 4179 ft, td 4183 ft. B. C. Morrison et al's T. Savage 1 (4-ac), J. Salmon sur, rig. Nivla Oil Corp.-Sutton-Hawkins' W. H. Gray 1 (2-ac), blk 10, Talco, elev 362 ft, top Pecan chalk 1635-1786 ft, top Georgetown lime 3488 ft, Paluxy pay zone 4158-4345 ft, completed, flowed 30 bbls per hr via tubing; Gray 2, elev 360 ft, dk; J. N. Kelly 1, nec 15.76-ac lse., J. Salmon sur A-506, elev 348 ft, Pecan chalk 1533-1730 ft, top Red Beds 3181 ft, top Georgetown lime 3640 ft, top Paluxy series 4228 ft, td 4360 ft, rust to pump; Kelly 2, rig. Nemo Oil Co.'s Talco School 2 (5-ac), I. P. Stern sur, elev 376 ft, rig. J. W. Osteen et al's W. DuBose 1 (1-ac), M. V. Delgado sur, Pecan chalk 1620-1810 ft, top Georgetown lime 3646 ft, dr 3850 ft. H. B. Ownby Drlg. Co.'s J. F. Barton 1 (4.8-ac), Delgado sur, elev 368 ft, cem sur cas. Paluxy Oil Corp.'s U. Shaw 1 (2.85-ac), Talco, Pecan chalk 1630-1738 ft, dr 3550 ft. Porter Bros. et al's W. T. Sullivan 1 (4-ac), I. P. Stern sur, Pecan chalk 1560-1760 ft, top Paluxy zone 4188 ft, td 4352 ft, no oil or water on dst at 4030-4352 ft, sdo may deepen to lower Trinity. Red Iron Drlg. Co.-Dean & Adkisson's A. Cornelius 1 (3-ac), M. V. Delgado sur, elev 370 ft, top Georgetown lime 3490 ft, Paluxy pay 4191-4350 ft, completed, flowed 70 bbls oil 8 hrs, later flowed 14 bbls per hr. J. I. Roberts Drlg. Co.'s T. A. Simms 1, c lot 3, blk 19, Talco, elev 368 ft, rig. G. Stratton et al's J. F. Barton 1 (1-ac), M. V. Delgado sur, elev 370 ft, Pecan chalk 1563-1746 ft, top Red Beds 3235 ft, top Georgetown lime 3384 ft, pay zone 4152-4350 ft, completed, flowed 30 bbls per hr. Stroube & Stroube's S. E. Stratton 1 (50-ac), MEP&P Ry. sur, 6 mi e Talco, elev 341 ft, Pecan chalk 1711-1880 ft, dst at 4280-4326 ft, mud with few gals oil, dd to 4510 ft, ran Schlumberger and to abandon.

SOUTH TEXAS

ARANSAS COUNTY — Buchingham Oil Co.'s McCampbell 1, James Orick sur, 2 mi nw of Aransas Pass, td 7501 ft, pb 6534 ft, blew out while making dst, moved in rig, sdtr, cored sand 6535-46 ft, show oil, sur 6546-60 ft, sdtr, td 6560 ft, set 7 in csg on bottom, woc.

ATASCOSA COUNTY—R. C. Lee, Trustee's U. A. Doumch 1, 152-ac tr, blk 10, J. T. Russell Sur. No. 1222, 3 mi n Poteet, set 7 in csg 3460 ft, top chalk 3503 ft, coring 3665 ft. Helvetia Oil Co.'s Susie Pratt 1, 176-ac tr, J. de la Garza sur No. 46, 1 mi nw Anchorage, td 2290 ft, set 7 in csg 2245 ft, woc. R. B. Swiger's C. A. Voss 1-A, 330 ft nl and el of sh 1, Voss Ranch subd, Samuel May sur, ru; C. A. Voss 2-A, 660 ft s No. 1-A, 660 ft e of Devonian discovery, Samuel May sur, lcn.

BASTROP COUNTY—Marts & Beaven's Parkford & Jenkins 1, center lot 24, Bastrop Town tr, td 3410 ft, ds stuck, fresh water broke in, sdtr 600 ft of stuck ds.

BEE COUNTY—Geo. M. Church et al's C. A. Ray 1, Anna Burk sur, 2 mi e Beeville, sd 4500 ft. Eden Oil Co.'s J. E. Copeland 1, Obed Marshall sur, d&s 3596 ft. Marine Oil Corp.'s J. C. Woods 1, 427-ac tr, J. Ryan sur, d sc well, Beeville field, sd 5831 ft. Nichols & Quinn's J. R. Scott 1, blk 7, Howeth & Swiger sub, Uranga gr, sp and sd, wor. H. A. Pressey's R. T. Hicks 1, 1120-ac tr, Jose M. Uranga gr, ab 568, 4½ mi s of Normana, td 3568 ft, broken sand, shale and shells 3482-3568 ft, show dry gas, set and cemented csg on btm, perf 3482-87 ft, swabbing.

BEXAR COUNTY—American Gas Co.'s Oliver No. 5, 400-ac tr, M. F. Rodriguez sur, Gas Ridge, dr 3108 ft in hard lime. Carter & Ingersoll's Louis Mann 1, 60-ac tr, John Christopher sur, 3 mi s Von Ormy, td 1202 ft, set 6⅝ in csg to 815 ft, wait on rest of pipe to set to btm. Joe Deupree's Mrs. R. S. Nina (R. S. Coffey) 1-A Rodriguez sur, 7 mi s San Antonio, sd 1200 ft, to recement csg at 1059 ft; R. S. Coffey 2, F. Rodriguez sur, sd 900 ft, sh. B. Schumacher's Hilda Gillette 1, 49-ac tr, M. C. de Alamiz sur No. 20, 7 mi s San Antonio, sd 1055 ft. F. M. Shaver's A. W. Bitter 2, Jose Baerrera sur No. 58, 2 mi nw Von Ormy, sd 1178 ft, top chalk 1171 ft. Dr. L. Skaggs' P. A. Chapman, Jr., 1, 125-ac tr, A. J. Leslie sur No. 99, 10 mi sw S. A., coring 965 ft. Fred Thorman's A. L. Salm 1, 330-ac tr, Peter N. Hays sur No. 3, dr 1685 ft. R. P. Whitfield's Col. John Sweeney 1, GH&SA RR sur, 11 mi sw San Antonio, td 804 ft, set csg, raising csg to set higher, will dd if no shows. Woodward & Hardie's R. W. Devilbiss 1, John W. Devilbiss sur, 1 mi w Thelma, sd 2280 ft, set csg abt 2800 ft, dk pulled in.

BROOKS COUNTY—The California Co.'s E. Garcia 1, tr No. 3 Las Mestinas de Gonzaline gr, Alta Mesa dist., fsh at 8022 ft, stuck ds. Fairway Prod. Co.'s Wm. Singer 1, sur 312, 1500 ft se Alta Verde disc, d&a 1006 ft.

BURLESON COUNTY—M. R. Exploration Co.'s J. M. Fountain 1, 963-ac tr in W. Raleigh sur, lcn. Red Bank Oil Co.'s Nellie Grann 1, 221-ac tr Eliza Santef sur, ru, prep sp.

CALDWELL COUNTY—Barnet Pet. Corp.'s M. L. Strawn 1, 1050 ft sel, 500 ft swl of 210-ac tr, Pablo Martinez sur, ¾ mi w of Lytton Springs townsite, dr 175 ft. H. B. Starkey's (J. J. Elam et al's) Francis-Brown-Cochran 1, W. F. Young sur, 5 mi e Luling, sand with show of o&g 1747-52 ft, making dst. Lincoln Pet. Corp.'s T. H. Brown 1, 70-ac tr, Dillard Cooper sur, dr 2250 ft. Wheelock & Collins' Alexander 1, 150 ft nel and nwl of se ½ of 158-ac tr Wm. Spillers sur, ¾ mi w of Branyon field, dr 1678 ft.

CALHOUN COUNTY—Benedum & Trees' John Reemer Est. 1, center of 2300-ac tr in John Ogsberry sur (tr being approx. center of 20,000-ac holdings, 10 mi sw Port Lavaca), letting contract for 8000-ft contract. Blanco Oil Co. and Al Buchanan's P. H. Welder, D. L. Palmer, sur 1 mi ne Heyser disc well, bldg dk. Continental Oil Co.'s Austin (Vandenburg) 1, sec 12, blk "H" Pedro Garcia sur, 1 mi n of other heaving shale wells, Seadrift prospect, set 11¾ in csg at 6598 ft, dr 7195 ft, shale. Humble Oil & Refining Co. and Plymouth Co.'s E. H. Welder 2, ¾ mi sw Heyser disc well, Jose Maria Rios sur, dst 5454-73 ft, rec 35 lbs. pres, 90 ft mud, comp 100 bbls day ¼-in ch, too high oil-gas ratio, pulled tubg and setting 25 in pin packer; P. H. Welder 3, making lcn. Matagorda Oil Corp.'s (Hilton & Miese) J. Brundrett 1, Wm. Bittle sur, sd 502 ft.

DE WITT COUNTY—L. W. Capps et al, H. Buchhorn 1, 211.1-ac tr, S. V. Slade sur, at the town of Lindenau, 5 mi w Cuero, sd 1804 ft for repairs. Universal & Gillespie's Schubel 1, C. Fitzgerald sur, abt 2 mi nw Yoakum, td 1567 ft, set 6⅝ in csg at 1550 ft, cap 1550-57½ ft, sand 1557½-67 ft, bailed down cement broke, now dr 1572 ft.

DUVAL COUNTY—Conservative Oil Co.'s DCRC 1, sur 51, 2 mi se Colemena field, set csg at 1553 ft, perf csg 1535½-36 ft, set plugs 1548 ft, swabbed sw and some oil, ran electric formation test 1559-2830 ft, show sand 1559-71 ft, td 2830 ft, temp abnd. Skidding on DCRC 2, 660 ft nw No. 1. Cox & Hamon, J. B. Peal sur 796, one mi ne Lopez, cored sand 2140-45 ft, set 7 in csg 2140 ft, woc. Gifford Oil Co.'s A. S. Roach 1, sur 200, 7 mi sw Driscoll field, coring 2507 ft, sand 2499-2505 ft, slight oil show. C. G. Glasscock's Milano Land & Gardens Co. 2, sec 88, 4 mi se Loma Novia, td 3298 ft, set csg 3291 ft, dr ahead to 3405 ft, swabbing. Frank J. Gravis et al's Gravis et al 1, sec 250, 9 mi w San Diego, td 5150 ft, d&a 5137 ft in sdtr hole; Schallert 1-A, sec 555, Palangana salt dome, td 1300 ft, set 10 in csg at 1300 ft, woc. Chas. T. Kleiner's T. E. Chernoskey, n 30-ac of se 60 ac sur 226, ¾ mi nw Westheimer & Daube No. 2, sand 2693-2708 ft, set 7 in csg 2707 ft, perf cas in Loma Novia sand with 20 shots, completing. M. D. Mastin's D. Ruiz 1-A, sur 128, dr 1715 ft. Navarro Oil Co.'s W. R. Peters 1, 480-ac sur 39, n of Peters field, oil, gas, and sw sand 2615-2734 ft, td 3005 ft, ran Schlumberger, gun perf 1780-90 ft in Cole sand, to comp as gasser. Pan American Prod. Co.'s J. F. Welder Heirs 1-H, 160-ac lse in sur 103, one mi sw of Loma Vista, ru. Randon Oil Co.'s Central Securities Co. 1, lot 23, Central Securities sub, Diego Minjosa, 5 mi sw of Realitos, top Jackson 2975 ft, top Hockley 3656 ft, top lower Gov't Wells 3812 ft, dr in Yegua 4530 ft. Rio Bravo & Coates, W. R. Peters 2, 330 ft sl and el of n½, sw¼ of sur 398, 1 mi E. Kohler gas field, comp as gasser thru perf in Cole sand. Rogers & Rogers' E. R. Hagist 1, sec 265, 2 mi ne of Eagle Hill, set sur csg woc; Rita S. de Pena 1, R. S. Pena plat, El Mesquite Trinidad Vela gr, se Cole field, td 2862 ft, sand 2850-62 ft, set csg 2845 ft, shut in for storage, bldg tanks. Smith & Hamill's Juan Benavides 1, Juan Benavides lands, E. Mesquite gr, dr 2950 ft. Shell Pet. Corp.'s J. F. Welder Heirs 1-B, 79.3 ac lse in sur 69, 1¼ mi nl Loma Vista field, dr 2350 ft. J. T. Stover's W. J. Hester 1, 330 ft sl, 990 ft wl of ne¼ of sur 47, ¼ mi w of Gov't Wells prod, sand 2251-60 ft, set 7 in csg, prep dr plugs.

FRIO COUNTY — Amerada Pet. Corp., Halff & Oppenheimer 7, B. J. Gilman sur, Pearsall, td 3926 ft, pb to 3877 ft, sd; Arthur Michael 2, A. Lynch sur No. 321, Pearsall, td 5431 ft in Austin chalk, set 7 in csg, woc; C. A. Miller 1, 394.3-ac tr in B. Satello sur No. 323, Pearsall, td 5413 ft in Austin chalk, set 7 in, woc. Termo Co. of Texas' J. D. Arp 1, 102-ac tr, S. Blain sur, 4000 ft w Pearsall field, td 5920 ft, top Austin chalk 5502 ft, show some oil, shot, hole heaved, co to btm.

GOLIAD COUNTY — Keystone Royalties Co.'s C. B. Wood 1-A, Rios sur, 3 mi e Berclair, sd 6702 ft. Claude Morgan et al's Mrs. W. O. Maetze 1, G. Baerrera sur, dr 2050 ft. Pettus O&R Co.'s P. H. Hickle 1, 330 ft nwl and nel of 231-ac tr, J. Gomez sur, ½ mi ne N. Pettus field. Sun Oil Co.'s Lena Fromme 1, 330 ft nl of farm, 330 ft wl of L. A. Maetze sur, 10 mi n of Goliad, lcn. Zeni Oil Co.'s M. Lutenbacher 3, sw ¼ of blk 25, Goliad Town sur, 2 mi s Goliad, dst 4150-60 ft, slight gas flow, top Pettus 5365 ft, took core recovered bottom 6 inches showed sandy shale, attempted to blow out, set 7 in cas 5352 ft, cemented with 560 sacks, dr plugs, blew out again, killed, now wo 3 in ds.

GONZALES COUNTY—Tull et al's Boska 1, 61.2-ac tr, B. McClure sur, co 2050 ft.

GUADALUPE COUNTY — Ira L. Armstrong's F. H. Fieke 1, 304-ac tr, B. & G. Fulcher sur No. 19, near Staples, sd 340 ft. Pat Armstrong's J. F. Fulcher 3, Robt. Smith sur, 2 mi sw Prairie Lea, sd 2477 ft. J. E. Clark's E. W. Williams 1, Green DeWitt sur No. 13, 4000 ft sw S. Darst Creek, 2509 ft, chalk 2358 ft, 6⅝ inch csg at 2357 ft, pb to 2495 ft, comp on pump 60 bpd. Clark & Weinert's W. O. K. Anderson 1-A, Green DeWitt sur No. 11, 6 mi s Kingsbury, 50 ft fr No. 1 Anderson, dr 2135 ft in ch. Eickenroht & Gallagher's O. H. Jahns 1, 840-ac tr, Green DeWitt sur. 3 mi sw South Darst Creek, td 3134 ft in Buda, ream to 2750 ft, will set csg. Riddle Oil Co.'s E. Nolte et al 1, 554 ft sel, 1910 ft nel of lse J. Sowell sur, 6 mi e Seguin, sp.

HIDALGO COUNTY—J. T. Barlow et al's

Chapa 1, tr 252, Por 29, n side Samfordyce field, td 3200 ft, pb 2800 ft, cored sand 2938-59 ft, shale 2959-60 ft, in sdtr hole, 114 ft of liner lost in hole just above td of 2959 ft, pb to 2450 ft. Maxwell-Mundy-Morris' Southland Dev. Co. (Hidalgo County Water Control & Impr. Dist.) 2, lot 1, blk 20 Alamo Land and Sugar Co. sub., Alamo Gr, 4 mi s Alamo, td 731 ft, still pumping fresh water. Dayle L. Smith Oil Co.'s Fairbanks & Young 1, blk 44, por 46, Reynosa Juris, 4 mi east Samfordyce field, sd 1856 ft. Union Sulphur Co.'s ARGL No. 7, tr No. 2309, blk 59, 4000 ft e Mercedes field, td 7608 ft, 5 in csg 7530 ft, recemented liner, dr out to 7588 ft, reperf and test ng; ARGL & I Co. 8, lot 2120, blk 87, N. Capisalle District, N. Mercedes field, td 7822 ft, 5 in csg 7822 ft, pb to 7500 ft, pb to 7218 ft, will sdtr, set 5 in csg at 7450 ft in sdtr hole, woc; ARGL & I Co. 10, 400 ft sl, 650 ft el of tr, blk 50, tr 2418, N. Capisalle district, bldg dk.

JACKSON COUNTY — Steinberger Pet. Corp.'s Drushell 1, lot 6, Gale sub, Hayes ranch, N. Rodriguez sur, edge Edna gas field, td 5132 ft, lost slips, pushed slips to side, cementing it there.

JIM HOGG COUNTY—J. J. Cosner's E. Vela heirs 1, blk 5, Clark & Cowder sub., sur 571-572, sh 1, El Peynote gr, 5 mi se Henne-Winch Farris field, lcn. Theo. Hicks et al's Kohler 1, blk 9, sub Noriscitas gr, 3 mi nw Hebbronville, mim. J. H. Meek, Jr.'s Martinez 1-A, 1590 ft nl, 330 ft el sur 623, ru.

JIM WELLS COUNTY — Camp Drilling Co.'s Jane Schallert 1, 3919-36 ft sl, 2097.17 ft el of 1134.83-ac tr, sh 3-A Los Presenos De Abajo gr, 2½ mi w Bentonville field, mim. Gist & Graddy's B. W. Owens 1, Poitevant sur, nw Bentonville field, dr 2722 ft; J. Bennett 1, lot 87, sec 76, Holdeman sub, 2 mi w Premont field, td corrected to 350 ft, prep set sur csg. La Jita Corp.'s Fred Erck 1, sec 15, 1 mi n of Bentonville disc well, set 550 ft sur csg, woc. Stanolind O&G Co.'s Frame & Bowers 1, sec 14, King Ranch sub, one mi ne Bentonville disc, dist 5385-5394, dst failed set csg 5405 ft, td 5425 ft, woc; J. E. Saim 1, sec 18, n offset discovery well Bentonville field, td 5850 ft, set csg 4880 ft, pb to 4340 ft, show 300 ft sw 5 min no pres., ¼ and ⅜ chokes, pb to 4000 ft and comp as gas well in sand 4017-30 ft; J. J. Thompson 1, sec "A" King Ranch, 150-ac tr, sand 5395-5400 ft, dst 5357-5405 ft, show 100 ft mud with a trace of oil, ¼ and ⅜ chokes, 15 min no pres, ran electric formation test, attempted dst 5391-5405 ft, dr to 5705 ft, set csg at 4000 ft sand level.

KARNES COUNTY — DeGraffe & Reele's Cochron 1, McConnell League, 5 mi ne Riddleville, ru and sd. Hickman et al, R. L. Barnett 1, Alex Hunter sur, sd 1800 ft. Worth Oil Co.'s E. Hysaw 1, 1069.8-ac tr, Don Erasmus Seguin gr, w of Kennedy, set sur csg, wor.

KERR COUNTY—Auld & Evan's I. R. Henner 1, sec 13 BS&F sur, 25 mi nw Kerrville, sd 2838 ft.

KIMBLE COUNTY—Dr. B. R. Thomas's B. D. Rust 1, sw ¼ sec 47, BS&F sur, 13 mi nw Junction, sp and sd for orders.

KLEBERG COUNTY—Clark et al's Kivlin 2 Fernando Creek, blk 8, sec 39, KT&I subd, dr 1425 ft. McCord & Daybault's Killam 1, lot 7, sec 53, DT&I sub, 5 mi se Recardo, lcn.

LA SALLE COUNTY—Davenport & Talbot's G. Watkins, sur 103, 25 mi e Encinal, sd 2729 ft. Kennedy & Johnston's Gilmer & Wildenthal 1, 140-ac tr, sur 283, 8 mi se Cotulla, dk blew down, rebldg. Paul Meadors & Adair et al's Reed 1, sec 136, T. Conlan sub, 15 mi e and 10 mi s of Cotulla, sd for fuel, td 3125 ft, whipstocked out at 2592 ft, dr 3720 ft. W. H. Vernor's M. G. Jeffries 1, sec 726, HE&WT Ry sur, 10 mi se Artesia, dk blew down, rebldg.

LAVACA COUNTY—Cole Pet. & Rhea Nixon's Reed E. Nollkamper 1, 3 mi se Kurxl, in 65.7-ac tr, sw cor of Arch Smothers sur, dr 1000 ft. Goode & Mayton's M. Schaffer et al 1, 481-ac lse, W. R. Hensley sur, lcn.

LIVE OAK COUNTY—Carrol Brown's R. A. Rackley 2, 750 ft sl, 150 ft wl of e½ of 130-ac tr J. L. Parks sur, Ab 781, 2½ mi sw of Whitsett, mim. Dirks Bros.' A. E. Nichols 1, S. Ryan sur, sd 1285 ft. Adolph Douvre's San Antonio Joint Stock Land Bank 1, plat 27, Tips subd, Richard Everett sur, 2 mi nw Three Rivers, reconditioning hole, well blew out, ran wild for two days, killed after pumping 200 sacks of baroid into hole, upper Cockfield 1784-93 ft, upper portion carried 25 mcf gas volume, lower portion show sw cored shale to 1799 ft, saturated sand and shells 1799-1800 ft, sd 1800 ft account weather. Inter-Allied Pet. Corp.'s Aetna Life Ins. Co. 1, J. Poitevant sur, 49.47-ac tr, 6 mi ne Dinero, dk and sd. J. J. McRoberts et al's J. D. Mahoney 1, 142-ac tr, Thomas Henry sur, 3 mi w Three Rivers, coring ahead 700 ft.

MAVERICK COUNTY—Rio Development Co.'s Winchester Kelso 1, 297-ac tr in sur 2, 3 m ne fr Eagle Pass, sp and sd. Throton & Underwood's Thompson heirs 1, 2000 ft swl, 750 ft sel of Uvalde County School Land sur No. 2, 6 mi n of Eagle Pass, lcn.

McMULLEN COUNTY—Rancho Oil Co.'s La Chusa 1, 330 ft nl and wl of se¼ of sur 52, lcn. C. C. Shumway's Shiner Ranch 9, sec 51, Shumway sub, Shiner Ranch, 9 mi s Wetz, top Jackson 814 ft, dr 1107 ft.

MEDINA COUNTY — Frank A. Brown's Mary Winn 1, John Ward sur, sd 1100 ft. N. C. Johnson's R. T. Taylor 2, 320 ac tr, Henry Castro sur 136, mim. Thomas & Rife's Amelia Zadich 1, S. O. Lubbock sur No. 509¾, se cor county, dr water well, set sur cas, woc.

MILAM COUNTY—J. O. Kilgore, Tr.'s W. R. Newton 1, J. Reed sur, Buckholt, dr 2510 ft.

NUECES COUNTY—Mills Bennett's J. K. Ordner 1, 120-ac tr, AB&H sur No. 410, ab 991, ½ mi w Saxet field, dr to 5918 ft, pb to 4000 ft sand, set 7 in cas 4150 ft, perf 4096½-4101½ ft, dst rec frbls sw and little oil, recement, woc. Coastland Oil Co. & Keystone Royalties' (Paul Benedum et al) Page Bros. 1, a 50-ac share 2, Geo. Franks sub, 3300 ft w Saxet field, td 5931 ft, pb dst 5740-58 ft, show 22 fourbles gasoline and mud, 450 lbs pres in 5 min, sand 5741-58 ft, td 5758 ft in sdtr hole, set 5 in csg on btm, perf 5751-55 ft, co, making some gasoline, cp 2100 lbs, tp 2200 lbs. J. T. Cox's John Haney, share 11, Harney lands, Gregoria Farias gr, 2½ mi se Callahan, sd 2085 ft. M. F. Hurlburt's J. C. Phillip 1, lot 9, 20 ac tr, sur 48, Flour Bluff Encinal Garden Tracts, 9½ mi se Corpus Christi, td 7503 ft, set csg at 5850 ft, perf csg 6633-43 and 6647-57 ft, showed 43.3 grav oil on dst, comp 23 bph ¼ ch. W. P. Hinds' Edwin Flato 1, center blk 8, sec 187, 1½ mi sw Clara Driscoll field, d&a 6067 ft, ran electric formation test. O. W. Killam's Betty Ellich, 600 ft s No. 1 Ellich, coring 3200 ft. G. M. Richardson et al's P. S. Carter 1, center of nw ¼ of se ¼ of sec 8, Laurels Farm tr, mim for 7000 ft test. Texon Drlg. Co.'s Mable Eliff 1, 3054 ac tr in A. Longria sur, 2½ mi sw of Agua Dulce field, dr 5080 ft.

REFUGIO COUNTY—Mills Bennett Prod. Co.'s Fred Walzell 13, Bonnie View sub, E. Lopez sur, 7 mi s Refugio, coring 5448 ft. Benedum & Trees' R. H. Welder 1, commence west corner Friedline pasture, thence n 53° degrees east 4443 feet to location in Juan Pabedano sur, ab 49, dk blew down, rebldg. E. W. Price et al's R. H. Wood 1, 600-ac lse in Dona Anastacia Reojas sur, ½ mi n of Woodsboro

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and 4 mi s Refugio field, mim. Tidewater Oil Co.'s E. G. Landgrof 1, 220-ac tr, J. Collyer sur, eastern portion county, pits dug, moved in material and sd for weather.

SAN PATRICIO COUNTY — Atlantic Oil Prod. Co.'s Maryland Trust Co. 1, blk 17, B-C sub, 1150 ft sw discovery well, Aransas Pass field, td 5350 ft, twisted off ds, fsh. Benedum & Trees' Mrs. E. H. Welder 2, sec 19, Welder Ranch sub, 3½ mi ne Sinton, td 7019 ft, pb 5027 ft, td in pb hole 5720 ft, testing. Bunte's W. C. Mayfield 1, tr 11, Roos sub, 2 mi n White Point field, sp and sd. O. W. Killam's J. F. Green Est. 1, 782-ac tr, R. Roos sur, 1½ mi sw Taft field, sp. Joe Lundin & Rowan and Hope's Mrs. E. W. Welder 1, sec 80, Welder Ranch sub, 2½ mi sw St. Paul, td 5005 ft, prep sdtr, unable recover ds. Plymouth Oil Co.'s E. H. Welder 2-D, sec 4, Welder Ranch subd 1 mi e Sinton field, dr 5468 ft in shale; E. H. Welder 50-C, Welder Ranch subd, td 5881 ft, set csg, dr plugs, tool slipped on several dst but showed abt 800 ft oil and mud no pres, comp, I. P. 250 bpd 5/32 ch, cp 600 lbs, tp 700 lbs. Taft Prod. Co.'s W. D. Thomas 1, tr 3, sec 6, Taft Farm Lands sub, one mi e Taft field, d&a 6009 ft, ran electric formation test.

STARR COUNTY—J. F. Anderson's Yzaguirre 1, 139-ac tr, porc 79, dr 2192 ft. John H. Clopton's Kelsey-Bass 3, 2460 ft el of porc 87 and 665 ft n State Highway No. 4, dr 565 ft. Porter Evan's SCCC 1, porc 89, 10 mi se Rio Grande City, sand showing gas 1758-66 ft, d&a 3210 ft; H. F. Ferry 1, blk 3, Evans sub, Ferry lands, porc 86, 7 mi se Rio Grande City, sp. F. Davenport & Slick Urschel's T. B. Slick Est. 1, el of sec 485, sp. A. A. Kelley's N. Gonzales 1, 100 ac lse, sh 62, por 71, sp and sd. Killam & Staggs' S. D. Ricaby 3, porc 83, Camargo Juris, 3 mi e Rio Grande City field, lcn. Ed Leach's Dona Est. 1, porc 84, Juris of Camargo, cored gas sand 963-975 ft, tested 320 lbs pres, 15 min, show dry gas, with set csg. A. G. McMath's M. Guerra & Son 1, blk 25, Conroe subd, porc 55, Juris of Mier 1, sd 85 ft.

WEBB COUNTY—Mid-Continent Pet. Corp. & Oklahoma Co. of Texas, Incorporated, E. T. Laubacher 1, 330 ft out of ne cor of nw¼ of sec 1394, sp.

WILLACY COUNTY — Shell Petr. Co.'s Yturria Land & Cattle No. 1, sh 65, San Juan de Carritos gr, La Sal Veja prospect, td 5486 ft, pb to 4600 ft, coring below 6795 ft.

WILLIAMSON COUNTY — Fritz Fuch's Jackson 1, Fred Murray 80-ac tr, H. Owen sur, dr 700 ft, shale. James Holdeman et al's Amor Forwood 1, 160-ac tr, HT&B Ry. sur, sec 4, sur 14, sd 965 ft. W. H. Moody's J. F. Stiles 1, 230-ac tr, J. Bevil sur, ½ mi sw Thrall, d&a 735 ft.

WILSON COUNTY—Otto Hierholzer's E. M. Hierholzer 1, B. Salinas sur, 12 mi sw Floresville, lcn. A. C. Reimenschneider's Lon Harrel 2, 209-ac tr, Manuel Baerrera sur, 5 mi s of Floresville, sd 740 ft.

ZAVALLA COUNTY—Bay Oil Corp.'s Natl Bank of Commerce 1, sec 43, blk "A", AB&M sur, 16 mi se Batesville, td 6585 ft, top Buda lime 6480 ft, pb to 6250 ft, acidized, showed some oil, shot tested in pb hole, show little oil, reaming to dd. Frank Buttram et al's Whitecotton 1, AB&M sur No. 1, top chalk 5281 ft, abnd 5766 ft. Leona Oil Corp.'s George West 1, C. Bustille sur No. 1, top chalk 5760 ft, sd 6020 ft, contract depth.

TEXAS GULF COAST

AUSTIN COUNTY—W. H. Mitchell's Fenner 1, s of Kenney, J. Fitzgibbons sur, dr shale 1768 ft.

BRAZORIA COUNTY—Gulf's Fairfield 1, Lockridge prospect, A. Robeson sur, set 4½-in liner to 8650 ft. Strake's Poole 1, Poole Ranch prospect, W. Eggers sur, shut in at 7506 ft.

BURLESON COUNTY — Red Bank Oil Co.'s Grann 1, Chriesman area, E. Sante sur, ru.

COLORADO COUNTY—Sterling's South 1, Garwood area, I&GN sur, sec 41, ru.

GALVESTON COUNTY — Shell's Maco Stewart 1, Hitchcock prospect, J. Spillman sur, dr sand 6320 ft. Sun's Houston Farms Dev. Co. 1, 2 mi se of Hughes 1, D. Buckley sur, woc 1452 ft.

GRIMES COUNTY—Crooke Bros. et al's Greer 1, near Carlos, P. B. Connor sur, sd 2880 ft.

HOARD EXPLORATION COMPANY
Seismograph Surveys
623 Esperson Bldg.
Houston Texas

HARDIN COUNTY—Resource Prod. Co.'s Howth 1, sw of Areola, J. Cotton sur, dr shale 5689 ft. Republic Production Co.'s Brooks 1, Silsbee prospect, J. W. Brooks sur, dr sand 6840 ft.

HARRIS COUNTY—D. B. Cherry et al's Dodger 1, Epsom Downs area, J. T. Harrell sur, ru. Houston Oil Co.'s Helberg & Lackner 1, Eureka gas field, R. Reinerman sur, woc 4953 ft. Zeni Oil Co.'s Perkins 1, Hockley dome, A. Sherrell sur, abn 7520 ft.

JEFFERSON COUNTY — Shell's Carpenter 1, Nome prospect, M. Pevito sur, dr plugs at 6058 ft. Sun's Broussard 1, Labelle prospect, B. Blackmon sur, fsh 9843 ft.

MATAGORDA COUNTY — Marathon Oil Co.'s Kountz 1, Midfield prospect, I&GN sur, sec 11, dr shale 5178 ft. Pierce Estate, Inc.'s Pierce Estate 1, ne of McCrosty, Wm. Brown sur, dr shale 6510 ft. Sun's Craig 1, Hawkinsville dome, T. Williams sur, swabbing 26 bbls per day.

ORANGE COUNTY—Tide Water's Brown 1, Cow Bayou prospect, M. Latham sur, dr shale 7660 ft.

SAN JACINTO COUNTY — Gholson & Decker's Randolph 1, Evergreen area, Vital Flores sur, dr shale 3108 ft.

WALKER COUNTY—L. M. Gay et al's Stubblefield 1, w of Trinity, G. Badilla sur, no report.

WASHINGTON COUNTY—Sun's Lauther 1, Clay Creek field, N. Clay sur, run electrical logging device 6547 ft.

WHARTON COUNTY—Cockburn's Fee 1, Magnet area, Smith & McKenzie sur, ru. Pure Oil Co.'s Borden et al 1, Blue Basin prospect, W. H. Leckie sur, coring 4105 ft; same operator's Shult 1, Blue Basin prospect, L. P. Ogden sur, dr shale 6035 ft.

WYOMING

ALBANY COUNTY—James Lake Oil Co.'s (George Parkinson et al's) George and Hunt 1, nw ne se 5-17n-75w, dr 1517 ft. Ohio Oil Co., Elisabeth Still 1, swc 12-15n-75w, lcn.

BIG HORN COUNTY—J. L. Drumheller, Government 2, nw ne se 17-49n-91w, dr 1030 ft. J. W. Bales, Parker 1, csw sw 23-49n-89w, dr 726 ft.

CARBON COUNTY — Medicine Bow Oil Co., Nintze-Government 1, cne se 18-22n-78w, lcn.

NIOBRARA COUNTY—Lewis Gokel 1, sw ne 31-34n-62w, dr 821 ft.

SUBLETTE COUNTY—Wright & Lackey Haddenham 1, nwc se sw 21-28n-13w, dr 821 ft. 821 ft.

WASHAKIE COUNTY—Wyoming Oil & Refining Co., Frison 1, nw sw nw 14-46n-97w, ran 6¼ in csg to 2236 ft and dr ahead.

Catalogs... Bulletins

Diesel Drilling Engine

Fairbanks, Morse & Company, Chicago, Illinois, announces availability of a 12-page, illustrated booklet describing Model 35-E Diesel engines for rotary drilling rigs. The engines feature moderate weight and speed consistent with long life.

Cubicles

General Electric Company, Schenectady, New York, announces availability of folder No. GEA 2326 describing cubicles with FH oil blast breakers for service up to 15,000 volts. Design of these cubicles features interphase barriers on the same circuit which are easily removable when the doors are open.

Bearings

SKF Industries, Incorporated, Philadelphia, Pennsylvania, has recently published for distribution a 24-page, illustrated booklet showing application of SKF ball and roller bearings in the oil industry. Among the bearings emphasized in the booklet are the spherical roller bearing, the cylindrical roller bearing, the self-aligning ball bearing, the deep groove ball bearing, and the spherical roller thrust bearing.

Liner Pump

A new and attractively illustrated bulletin describing their Oil States insert liner type pump has been published by the Mid-Continent Pump Supply Company of Tulsa. Copies are available on request.

Plug Valves

American Car and Foundry Company, Valve Department, New York City, has issued catalog No. 2, describing its "Full Area Lubricated Plug Valve." The catalog will be mailed to interested parties upon request.

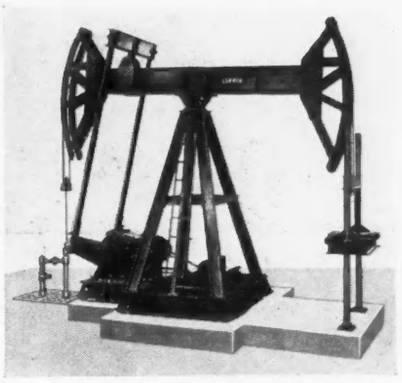
NEW PRODUCTS FOR THE FIELD
Machinery • Tools • Catalogs • Books

PUMPING UNIT
Lufkin Foundry & Machine Company

Lufkin Foundry & Machine Company, Lufkin, Texas, has announced the new Lufkin long stroke unit, a type that employs a novel arrangement of counterbalance and samson post, with the location of the unit near the well. This new unit, furnished with either No. 41 or No. 51 double reduction type herringbone gears in from 40 to 50 horsepower capacities, has strokes of 40 inches, 60 inches, 80 inches, 100 inches and 120 inches, and is arranged for electric motor or multi-cylinder gas engine drive.

The unit operates with walking beam centers of 24 feet and polish rod capacity of 30,000 pounds. Large heavy bearings are used throughout the equipment and the entire unit, walking beam and samson post is mounted on structural steel base nine feet wide, 14 feet 6 inches long, and 16 inches deep.

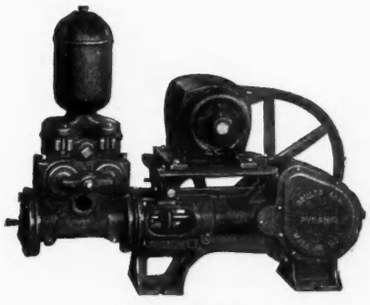
The samson post is a sturdy 4-leg job, mounted on top of the structural base, 14 feet 3 inches above the base. A very novel and effective counterbalance arrangement has been perfected, as will be noted.



Lufkin Pumping Unit

PUMPS
Goulds Pumps, Inc.

Goulds Pumps, Inc., Seneca Falls, New York, has announced a line of power pumps suitable for filling general pumping services in the oil fields. These pumps, known as the Figure 1813 "New Pyramid" pumps, are of the single cylinder, horizontal, double-acting type, built in four sizes, with capacities of from 420 to 3500 gallons per hour. The power end is of a substantial one-piece casting, which forms the base of the pump, houses the gears, crosshead and guides, forms the oil reservoir and supports the fluid end.



Goulds Pump

All working parts of the pump are continuously and automatically supplied with oil, the patented oil circulator distributing the oil to all bearings, pins and guides. A concave water deflector effectively prevents any gland leakage from entering oil reservoir.

The cylinder is a one-piece casting fitted with a brass cylinder lining, two separate removable cylinder heads, large rubber valve discs on bronze grid seats located above the cylinder to insure priming and prevent air binding. Suction and discharge valves are easily reached without disturbing piping. The piston rod is stainless steel. Piston is packed with two Goulds "Tiger" brand crimped leathers that will give years of service, the manufacturer claims. Adjustable motor mounting with sliding type motor rails permits easy mounting of any motor without drilling or other machine work—an important feature on all Goulds "New Pyramid" pumps.

Conveniently located priming and drain plugs make this pump easy to prime or drain without loosening air chamber, cylinder heads, or other parts of the pump. A large air chamber cushions the water flow. Removal of this chamber exposes the two studs, each holding a pair of suction and discharge valves.

SEISMOGRAPH DRILL
Sullivan Machinery Company

Sullivan Machinery Company, Michigan City, Indiana, has announced a new truck mounted seismograph drill designated as the No. 36. This drill is a complete light weight highly portable drilling unit utilizing the truck motor for power through a power take-off. Has capacity to take two-inch core to depths of 800 feet or drill five-inch shot holes to 500 feet.

Features stressed are hydraulic feed with unique single lever control, two speed transmission, independent control of drum and rotary, hydraulically raised mast of welded airplane type tubing and ability to use a kelley or gravity feed as desired. Chuck size is large enough to pass 2⅜-inch (X) drill rods.

This Week with the Industry's EQUIPMENT SUPPLIERS

P. R. King Joins Taubman Organization

P. R. King has been appointed special representative for Taubman Supply Corporation, effective July 1.

King for over six years has been representative of Republic Supply Company covering Kansas and Oklahoma territory, and during the last year was division sales manager for Portable Rig Company of Houston, with headquarters in Tulsa.

Larkin Houston Branch In Larger Quarters

Gulf Coast warehouse facilities of the Larkin Packer Company have been increased to triple the original size. After serving the oil industry along the Gulf Coast out of Houston for more than five years, it was necessary to establish larger quarters. The new location is 1502 Maury Street, Houston. Larger and more complete stocks are now being carried in order to give better service to customers, the company has announced.

W. G. Baumann who formerly worked the entire Gulf Coast, has been

PAUL R. KING

Larkin Packer Company's new plant at Houston

transferred to Corpus Christi to work that part of the coast west of Houston. A. L. Lloyd will assist Baumann, working Houston and east.

Lunch Commemorates 50th Year With Worthington

A testimonial luncheon to Harry T. Smith, traffic manager of Worthington Pump & Machinery Corporation on the anniversary of 50 years of continuous service with that organization was held at the Newark Athletic Club, Newark, New Jersey, July 8. Smith has been with Worthington since 1886, having started with the old Henry R. Worthington Hydraulic Works, then situated in Brooklyn.

Smith is a native of Brooklyn, was educated in its public schools and at Pratt Institute. His headquarters have been, since 1933, at the corporation's general offices in Harrison, New Jersey.

Hercules to Make Cellulose Acetate

Negotiations have been completed between Hercules Powder Company, Wilmington, Delaware, and the I. G. Farbenindustrie Aktiengesellschaft, Frankfurt, Germany, by which Hercules comes into control of the American patents covering the I. G. processes on manufacturing cellulose acetate.

M. G. Milliken, general manager of the cellulose products department, stated Hercules expects to be in quantity production of flake cellulose acetate by December.

Roberts Made Branch Manager of F-W-D

Appointment of Chester J. Roberts as manager of the Milwaukee, Wisconsin, branch of the Four Wheel Drive Auto Company has been announced by R. H. Schmidt, general sales manager from the company's headquarters at Clintonville, Wisconsin. Roberts has been with the company since March 25, 1935. For six years he was the manager of the industries and trade promotion divisions of the Milwaukee Association of Commerce. Roberts is an industrial and sales engineer by profession, having spent over 10 years in dealing with problems of sales, organization and production in automotive and other types of industries.

Evans Retires After 45 Years With Goodrich

Evan J. Evans, believed the dean of all rubber calender men from the standpoint of active continuous service in the industry, has retired and was placed on the pension pay roll of The B. F. Goodrich Company July 1. Evans on that date was with Goodrich for 45 years, five months and 20 days. He started with the company on January 10, 1891.

It was during his service as head of the "bottle seal" calender in 1906 that Evans first became acquainted with J. D. Tew, now president of Goodrich. "Bottle seal" compounding and calendering, an unknown term to many of the younger workers in the rubber industry, was part of the operation that turned out millions of rubber seals for bottles.

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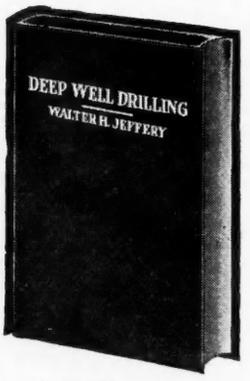
DEEP WELL DRILLING

by

WALTER H. JEFFERY



New Chapters:

Geophysical Prospecting and Air Mapping.

Straight Hole Drilling and the Treatment of Crooked Holes.

Water Supply.

The Gas-Air Lift Method of Producing Oil.

A. P. I. Codes.

Preparatory to writing this book, the author spent weeks in a first hand study of modern methods of drilling by the rotary system, and of completing wells, controlling high pressures and operating wells in the deep fields of California and Oklahoma.

The third edition contains 816 pages. 150 pages more than the second edition, and 452 illustrations, price $6.00.

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GULF PUBLISHING COMPANY

3301 BUFFALO DRIVE **HOUSTON, TEXAS**

Squeaks from the Bull Wheel

Speckulation

Moses kept a secondhand clothes shop, and on leaving it in charge of his son Ikey during the dinner hour imparted to him the fact that on the price ticket one dot represented one dollar, two dots two dollars, and so on.

Returning, Moses inquired of his son: "Haf you had any customers, Ikey—vat?"

"Yes, Fader, I have sold de grey coat and vest for eight dollars."

"Vell, vell, now, you did goot business, for it was only five dollars."

"No, Fader, I kept the ticket; see, it has eight little dots here."

The old Jew scratched his head, and smilingly remarked:

"Jubilee Jerusalem! I vil never kill anoder fly."

Nautical

She—"You remind me of the ocean."
He—"Wild, romantic, restless—?"
She—"No, you just make me sick."

Not Particular

"What's the difference between a snake and a flea?"

"A snake crawls on its own stomach.

The Little Darling

Little Lucy had just returned from the children's party and had been called into the dining room to be exhibited before the dinner guests.

"Tell the ladies what mama's little darling did at the party," urged the proud mother.

"I frowed up," said Lucy.

Logic

All men are fools.

Yes, dear. We were made fools so you girls wouldn't all be old maids.

Her View

High School Teacher: "What could be more pitiful or sadder than a man without a country!

High School Girl: A country without a man.

Pat Fainted

An Irishman coming out of ether in the ward after an operation exclaimed audibly, "Thank Heaven, that is over!"

"Don't be so sure," said the man in the next bed. "They left a sponge in me and had to cut me open again." And the patient on the other side said, "Why, they had to open me, too, to find one of their instruments."

Just then the surgeon who had operated on the Irishman stuck his head in the door and yelled, "Has anybody seen my hat?"

Not Portable

"Well, Miss Smith, how would you like to take a business trip with me next week?"

"Say, I may be your typewriter, but I'm not portable."

Prevention

The teacher put a small worm in a glass of water. The worm swam around and seemed to enjoy it. She took it from the glass of water and put it in a glass of whiskey. The worm wiggled a few times and died.

She asked the pupils what the demonstration proved. Johnnie, who was popping his fingers loudest, was given permission to give his version.

"If you always drink whiskey you will never have worms."

Coverage

Visitor (to little girl): And was your grandpa covered with insurance when he died?

Little kirl: No'm; just a nightshirt.

One on the Old Man

Father: When I was a young man girls knew how to blush.

Daughter: What was it you used to say to them?

A Shattered Dream

She was reading a book. Suddenly she put it down and stood up and faced her mother. "Oh, mother," she exclaimed, "I've decided what I want to do! I want to rise to great heights. I want to act, to go on the stage, the films, to reach the topmost rung of the ladder."

The mother nodded.

"That's the spirit, darling," she said. "Now climb up the steps and help me put up these clean curtains."

That's Different

Jimmy: Wat's de best way to teach a girl to swim?

Johnny: Well, yer want to take her gently down to de water, put yer arm around her waist, an'—

Jimmy: Aw, cut it out! It's my sister.

Johnny: Oh! Just push her off de dock.

Inopportune

Mrs. Jones could only find two aisle seats—one behind the other. Wishing to have her sister beside her, she turned and cautiously surveyed the man in the next seat. Finally she leaned over and timidly addressed him.

"I beg your pardon, sir, but are you alone?"

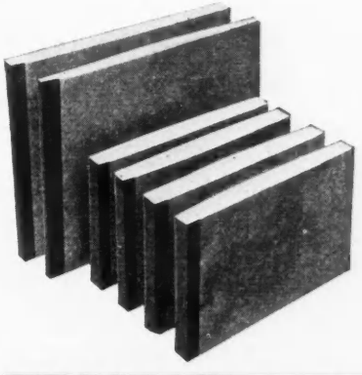
The man, without turning his head in the slightest, but twisting his mouth to an alarming degree and shielding it with his hand, muttered:

"Cut it out Kid—cut it out! My wife's with me."

Not Always Bad Luck

Mrs. Jones: "There! Broke my looking glass! Now I suppose I shall have seven years' bad luck."

Mrs. Brown: "Don't you believe it, Mrs. Jones. A friend of mine broke hers, and she didn't have seven years' bad luck. She was killed in an explosion the next day."



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available at mass production prices

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These forms are printed on 16-lb. bond paper. They are substantially bound. Duplicates are printed on colored bond and perforated, pencil carbon included with each book.

After carefully reviewing the forms of a number of oil companies, The Gulf Publishing Company has made up nine standard forms listed above and has produced these in such quantities as to enable oil companies to secure them at substantial savings.

Forms will be shipped prepaid at prices shown. Samples will be sent upon request.

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Houston Lighting & Power Co.	—
Houston Ready-Cut House Co.	—
Hughes Tool Co.	Fourth Cover
Humble Oil & Refining Co.	—
Hyatt Roller Bearing Co.	—
Hydril Co.	First Cover
I	
Independent Exploration Co.	—
Independent Pipe & Supply Co.	—
Ingersoll-Rand Co.	—
International Cement Corp.	—
International Derrick & Equipment Co.	—
International Geophysics, Inc.	—
International Harvester Co.	15
The International Nickel Co.	—
International Supply Co.	—
J	
Byron Jackson Co.	—
E. C. Jacobson	—
Jarecki Manufacturing Co.	—
W. P. Jenny	—
Jenkins Brothers	—
Jensen Brothers Manufacturing Co.	—
Johns-Manville	—
S. M. Jones Co.	—
Jones & Laughlin Steel Corp.	—
The Jones Oil Well Reamer Co.	—
K	
Hotel Kansas Citian	—
Kerotest Manufacturing Co.	—
Kibele Manufacturing Co.	—
L	
Lamar Hotel	74
Lamb Piston Sales Co.	—
Landis Machine Co.	—
Larkin Packer Co.	Second Cover
The Lane-Wells Co.	—
The Layne & Bowler Co.	—
Lenox Hotel	80
Le Roi Co.	—
A. Leschen & Sons Rope Co.	—
The Lincoln Electric Co.	—
Link Belt Co.	—
Lucey Boiler & Manufacturing Corp.	—
Neal Lucey Co.	78
Ludlow Valve Manufacturing Co.	—
Lufkin Foundry & Machine Co.	—
M	
MacClatchie Manufacturing Co.	46
Maintenance Engineering Corp.	65
D. S. Mair Machinery Corp.	—
Maloney Tank Manufacturing Co.	—
Martin-Decker Corp.	—
McAlpin Hotel	—
McIntosh & Seymour Corp.	—
J. H. McEvoy & Co.	—
Merco Nordstrom Valve Co.	—
Mid-Continent Pump Supply Co.	—
Mission Manufacturing Co.	6
Mississippi State Mineral Lease Commission	64
Lee C. Moore & Co.	—
Muskogee Iron Works	—
N	
National Bank of Tulsa	—
National Exploration Co.	—
The National Supply Co.	17
National Tube Co.	25
Naylor Pipe Co.	18
New Deal Specialty Co.	—
Norma-Hoffman Bearings Corp.	—
W. C. Norris Manufacturer	—
Norvell-Wilder Supply Co.	—
O	
Walter O'Bannon Co.	—
O.C.S. Manufacturing Co.	—
Oil Center Tool Co.	—
Oil City Brass Works	—
Oil Well Supply Co.	—
The Oster Manufacturing Co.	68
Otis Pressure Control	—
P	
The Parkersburg Rig & Reel Co.	—
Patterson-Ballagh Corp.	—
Pelican Well Tool & Supply Co.	62
Petrolgum Electric Power Club	—
Petroleum Rectifying Co.	—
Petty Geophysical Engineering Co.	—
The Pierce Governor Co.	—
Pittsburgh Equitable Meter Co.	—
Pittsburgh Steel Co.	—
Portable Rig Co.	—
Price-Trawick, Inc.	—
Producers Supply & Tool Co.	—
R	
Rector Well Equipment Co.	—
Reed Roller Bit Co.	—
Joseph Reid Gas Engine Co.	—
The Republic Rubber Co.	—
Republic Steel Corp.	—
Norman H. Ricker	—
The Ridge Tool Co.	—
Dewey T. Ross, Inc.	—
Walter Ruska & Co.	—
S	
Scandinavia Belting Co.	—
J. A. Schley	78
Schlumberger Well Surveying Corp.	—
Security Engineering Co.	—
Seismic Explorations, Inc.	—
The Shaffer Specialty Co.	—
Shaffer Tool Works	—
Shell	—
Sinclair Refining Co.	—
SKF Industries, Inc.	—
R. W. and P. B. Skinner	—
A. O. Smith Corp.	—
E. M. Smith Co.	67
Nowery J. Smith Supply Co.	—
South Chester Tube Co.	—
South Texas Geophysical Corp.	78
Southern Engine & Pump Co.	—
Southern Pacific Lines	—
Spang & Co.	70
Spang, Chalfant & Co.	—
Sperry-Sun Well Surveying Co.	69
Stanley Tools	58
Star Drilling Machine Co.	75
Sun Oil Co.	—
T	
Templeton Kenly & Co.	—
Texas Electric Steel Castings Co.	—
Texas Iron Works	—
Texas Rubber & Specialty Corp.	—
Texas Steel Co.	—
Thermoid Rubber Co.	—
Thornhill-Craver Co.	—
The Timken Roller Bearing Co.	—
Tips Engine Works	—
Titusville Iron Works Co.	—
Tnemec Co.	—
Edgar Tobin Aerial Surveys	—
Tretolite Co.	—
Trimont Manufacturing Co.	—
Trinity Portland Cement Co.	—
Twin Disc Clutch Co.	—
U	
Union Carbide & Carbon Corp.	—
Union Wire Rope Co.	—
United States Rubber Products, Inc.	—
United States Steel Corp.	—
United Supply & Manufacturing Co.	—
University of Texas Lease Sale	—
V	
Volcano Burner Co.	—
W	
Waukesha Motor Co.	—
Westinghouse Electric & Mfg. Co.	—
The Wheland Co.	—
Wickwire-Spencer Steel Co.	—
I. H. Williams & Co.	—
W-K-M Co.	—
Williamsport Wire Rope Co.	—
Wilson-Snyder Manufacturing Co.	—
Wilson Manufacturing Co.	—
Wilson Supply Co.	—
Worthington Pump & Machinery Corp.	—
Y	
Yale & Towne Manufacturing Co.	—
Youngstown Sheet & Tube Co.	—

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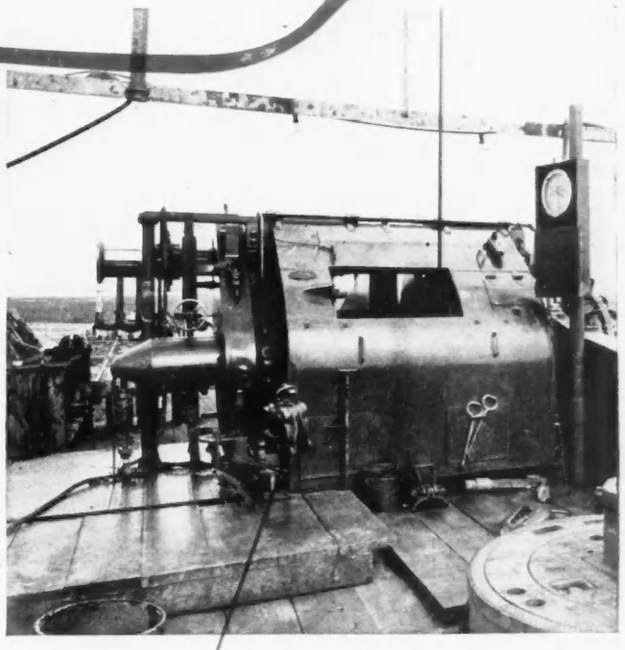
DREADNAUGHT 360-Ton Capacity, 6-Sheave, Straight Line Crown Block and 300-Ton Capacity, 5-Sheave Traveling Block on a deep well at Dickinson, Texas.



DREADNAUGHT No. 11 Unitary type, 3-Shaft, 4-Speed Draw-works digging a deep test at Bryan Mound, Brazoria County, Texas.

In the hard rock formations of Oklahoma . . . in the deep, tough gumbo and shale of the Texas and Louisiana Gulf Coast, DREADNAUGHT heavy duty Drilling Blocks and Draw-works have been definitely proven.

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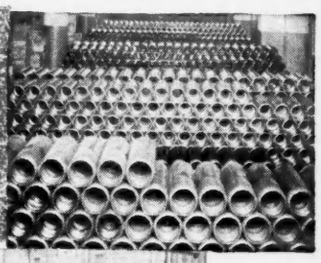
CERTAINTY OF PERFORMANCE OF

HUGHES TOOL JOINTS

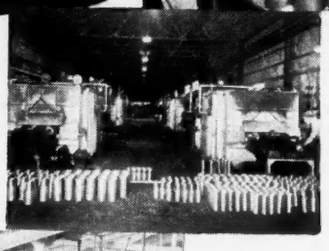
FROM RAW MATERIAL - - -

TO FINISHED PRODUCT

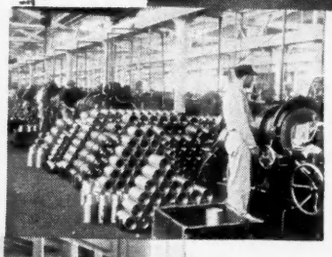


8. Finished Product — Ample stocks to meet the industry's need.

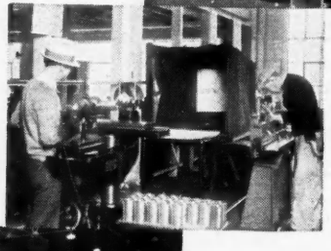
7. Inspection —Each joint undergoes 35 inspections and tests.



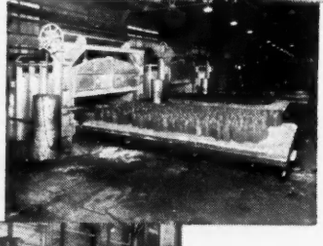
6. Heat Treatment.



5. Threading.



4. Comparator for checking thread form on Hobs, magnified 30 times.



3. Annealing.

2. Forging operation.

1. Complete tests insure highest quality steel.

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